

American Artisan

Founded 1886

The Warm Air Heating and Sheet Metal Journal

University of Florida
Gainesville Fla
Library

Vol. 97, No. 6

CHICAGO, FEBRUARY 9, 1929

\$2.00 Per Year

You get all the Profits

When you have to meet competition, The New Jersey Zinc Company's Zinc Roofings—Standing or Batten Seam—will pull strong for your bid.—And to the full advantage of your customer. ¶ It's the lowest cost permanent metal roofing, and there's no after worry—no patching, no replacing—it's permanent. ¶ Besides that, it is quickly and easily laid. It leaves you all the profit.



The New Jersey Zinc Sales Company

160 Front Street, New York City

The New Jersey Zinc Sales Company
160 Front Street, New York
Please send me full information on the New Jersey Zinc Company's Zinc Roofing.

Firm

Mr.

Address



THE NEW JERSEY ZINC COMPANY'S ZINC ROOFING

PREMIER • DELUXE



The second of a series of twelve advertisements to appear on this page.

a new slant

—at Branch Store competition and your plans for 1929.

PREMIER of Dowagiac believes that you, as a dealer, are the logical step between manufacturer and consumer. If you, too, believe that—read on.

IN THE battle between the independent dealer and the branch store Premier is definitely lined up on the side of the dealer. You'll never wake up some fine morning to find a Premier Branch in your city.

HERE are two basic rules to always remember if you want to win this fight.

FIRST, don't even think of buying a furnace from a manufacturer who operates a string of branches. Why build up a profitable business for him to take over? He may open up in your town next.

SECOND, buy from a manufacturer who is in the fight to help you win and understands your problems.

PREMIER men know the tricks of Branch Stores and they know how to swap blow for blow in the fight for business. Premier dealer helps are created by men who spend part of each year right on the firing line and know what is needed. These men are in your corner to fight branch store competition—with no quarter asked or given.

WITH the aggressive help you get from Premier, you can lick Branch Store competition to a fare-ye-well. That's the new slant.

Read "Are You A Traitor" in Premier Pictorial February Issue.

PREMIER WARM AIR HEATER Co., DOWAGIAC, MICH.

PREMIER
DELUXE
HEAT
HEALTHY
HUMID
HEAT

THE 18 POINT SERIES

POINT NO. II

RIVETED AND CALKED

A FURNACE, to give "Cleaner Heat" must be Leak and Smoke Proof.

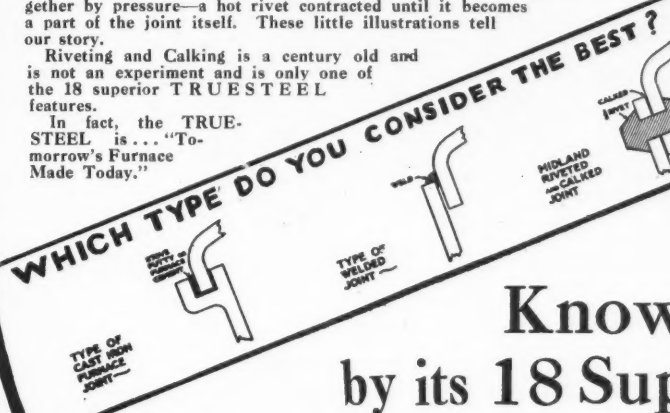
Experience is a great teacher and has taught us that to make a furnace leak-proof it must be closed under pressure with powerful, modern machinery, riveted and calked.

Copying after ship and locomotive boiler construction, the TRUESTEEL is Heavily Riveted and Securely Calked. This is double insurance that the TRUESTEEL, a Midland product, will not leak.

Compare the methods of joining, pictured below. Note how closely the Calked and Riveted joint adheres—forced together by pressure—a hot rivet contracted until it becomes a part of the joint itself. These little illustrations tell our story.

Riveting and Calking is a century old and is not an experiment and is only one of the 18 superior TRUESTEEL features.

In fact, the TRUESTEEL is... "Tomorrow's Furnace Made Today."



Know this Furnace by its 18 Superior Points!

The American Public Demands "Cleaner Heat!" Present it to your prospects, as a TRUESTEEL Distributor. The Superiority of Riveted and Calked Joints is easily demonstrated. You will find the TRUESTEEL Exclusive territory Franchise very liberal and that it is backed by sure-fire cooperative sales plans.

Investigate! Your territory may still be open. Write today!

THE MIDLAND FURNACE CO.
COLUMBUS, OHIO



1929 WILL BE A
MIDLAND YEAR

SEE FEB. 23rd
ISSUE
FOR POINT III
"ROTARY GRATE"

THE MIDLAND
COLORED
WINDOW TRIM
IS READY

MIDLAND FURNACES

ALL STEEL



CLEANER HEAT

"Western" FURNACES



Western Heavy Duty Heaters

MASSIVELY constructed to heat schools, churches, auditoriums, or community halls. In single settings or batteries of two or more—fired separately or collectively meeting requirements of various temperatures.

All of copper-bearing steel with fire brick lining, large and roomy combustion chamber, heavy corrugated dome. Grates operated from a standing position.

Large radiator also of copper-bearing steel. Hollow center for increased heating surface. Easily cleaned from either side.

This powerful combination can be connected to 8x12 flue. Has elliptical galvanized casing which fits the heater like a glove, leaving no waste space.

*Write for information. Send in your plans.
Estimates made without obligation. We
maintain a free engineering department.*

Western Steel Products Company

130 Commonwealth Ave.

DULUTH, MINNESOTA, U. S. A.

Distributed by:

Atlanta, Ga. Moncrief Furnace Company
Kansas City Kansas City Furnace Co.
Pittsburgh, Pa. Wagener-Prole Furnace Co.
San Francisco Pacific Sheet Metal & Furnace Co.

Cincinnati, Ohio. Niehaus Furnace & Repair Co.
Ravenna, Ohio. Ravenna Furnace Company
Chicago-Western Steel & Products Co.
..... 3025 W. Van Buren St.

Beauty—More Than Skin Deep



Fred R. Dowsett
Vice-President and General Manager

Flash—alone—

Performance alone will not sell a furnace—any more than it will a motor car. But overflowing Beauty and performance for the money will get the buyers' dollars. See the **NEW ROUND OAK** Line to see how we have fulfilled these requirements in a manner that is not equalled anywhere.



Attraction that Follows Through

That's the gist of the opinion of men who know what people want in furnaces.

This merchandise—hits the spot where they live—sales attraction. For here is the beauty that attracts, backed by the convenience and heating performance that people want. They look good and are as good as they look.

In a word, just as we promised, these furnaces fit into the "New Order of Things." That means a big profit year for Round Oak dealers. Write for full details of the line, and the distinct advantages of the Round Oak line.

THE BECKWITH COMPANY, Dowagiac, Mich.
"Round Oak Folks" Established 1871

FLORENCE

...a real HOT BLAST!



(Arrows in above picture show direction of heat)

THE Florence Hot Blast Furnace embodies the same patented principle of combustion as the famous Florence Hot Blast Heater—recognized **everywhere** and **ever so long** as the **best** ever developed. It is the only coal furnace that can be positively controlled to any degree of heat. Operates best on **cheap** grade slack or lump coal. The Florence Furnace burns the smoke and soot—nothing is wasted. The only furnace that will **maintain even** temperature without the use of a thermostat.

Will you be among the first to profit by this new necessity—will you be visionary, alert to the profit and business building possibilities of Florence Hot Blast Furnaces?

Use the coupon below. Let us give you full particulars about our liberal proposition. The great resources and judgment of this great institution are squarely behind you. The way is now open to prosperity and prestige. Sign and mail the coupon NOW.

C. EMRICH COMPANY

Founded in 1861

COLUMBUS, OHIO

Manufacturers also of the famous Supreme Florence Heater and Florence Stove

MAIL THIS COUPON for COMPLETE DETAILS

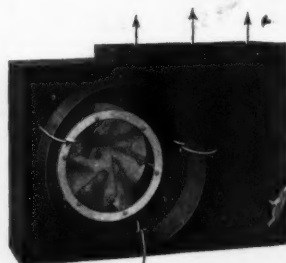
NAME
 ADDRESS
 CITY
 STATE

AA 2-9-29

Positive Heat for That Cold Room

with an

AMERICAN HEAT HUSTLER

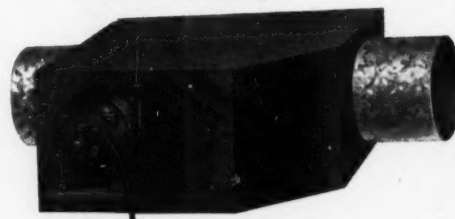


THE American Heat Hustler will draw warm air from the furnace and blow it into the room. It makes any warm air pipe work.

Unusually long warm air pipes may be forced to heat with the hustler. It goes into the warm air pipe; motor outside air flow; controlled from room to be heated. Two sizes—500 for 8, 9 and 10-inch pipes, 1200 for 12 and 14-inch.

PATENTS PENDING

Send for Catalog and Prices



AMERICAN FOUNDRY & FURNACE CO.
 BLOOMINGTON, ILLINOIS

Cut Your Coal Bills

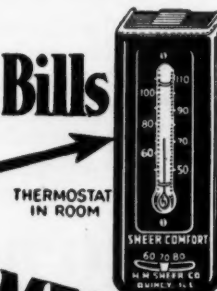
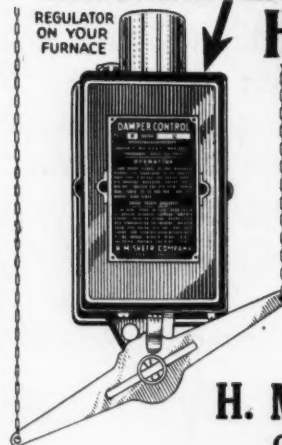
with

"SHEER COMFORT"

Automatic Electric

HEAT CONTROL

REGULATOR ON YOUR FURNACE



THERMOSTAT IN ROOM

Dealer's Price
 Only

\$17⁵⁵

Write
 or
 Wire

H. M. SHEER CO.
 Quincy, Illinois

Dept. AA

Established 1888

When writing mention AMERICAN ARTISAN—Thank you!



—one piece radiator,
collars extending
through casing.

—feed section comes
through the front.

—one piece base.

—bigger humidifier.

—flat and triangular
type grates inter-
changeable through
ash door.

—built in strict accord-
ance with Standard
Code.

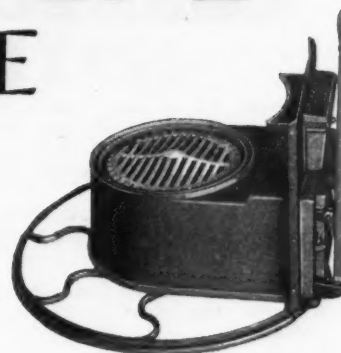
Part For Part—a Finer Furnace

AND—every part a selling feature. Combined in this new and improved NIAGARA they constitute two vitally important advantages that no forward-looking dealer can afford to overlook: *much easier to market, infinitely easier and simpler to install.* Such advantages cannot help but result to your permanent profit. Detailed descriptive literature awaits your request. Write for it today.

The Forest City-Walworth Run Fdy's Co.

1220 Main Avenue Cleveland, Ohio
MEMBERS NATIONAL WARM AIR HEATING ASSN.

NIAGARA FURNACE



Efficient Operation with Less Fuel



—the new

GIBRALTAR

Self-Cleaning Open Dome Furnace

This furnace is designed to operate efficiently with a minimum of fuel. Because there are no places for soot and ashes to accumulate, the heating surface remains clean and assures good radiation.

The Feed Section is cast in one piece to prevent smoke, gas, or dust leakage. The Open Dome, made of heavy, corrugated castings forms a large combustion chamber that is ideal for burning soft coal or oil. Its many outstanding merits make it easy to sell.

In addition to our complete line of Gibraltar furnaces, we give "dealer helps" and a thorough, efficient, engineering service.

Dealers Wanted! Address Sales Dept. A

P. H. MaGirl Foundry & Furnace Works

BLOOMINGTON, ILLINOIS

PROMPT
SHIPMENTS

RELIABLE
SERVICE

CHICAGO FURNACE PIPE AND FITTINGS

Try our new self-locking double stack

Write for illustrated catalog No. 2 on Pipe and Fittings and all Furnace Supplies

CHICAGO FURNACE SUPPLY CO.
1276-78-80-82 Clybourn Ave. CHICAGO

CORRECTION NOTICE

On page 10 of last week's AMERICAN ARTISAN there appeared a full page advertisement featuring the new 1929 Torrid Zone Steel Furnace. The heading reads *Large Radiators*, etc. This should have read—

LARGER RADIATORS

as the Torrid Zone has always had large radiators, whereas the new 1929 models have LARGER radiators.



"GEM" ADJUSTABLE REGISTER SHIELDS

Adjustable
10 in. to 19 in.

Have you systematically lined up all possible "GEM" Adjustable Register Shield customers in your territory? Every home heated by a warm air furnace needs one for every wall or floor register to save fuel and keep down dust, dirt and soot. Retail at: "GEM" Floor Shield, Black, \$1.25; Ox. Cop., \$1.50; "GEM" Wall Shield, Black, 65c; Ox. Cop., 75c.



1140 BROADWAY, NEW YORK, N.Y.

BUY FROM YOUR JOBBER

"American Seal" FURNACE CEMENT

**Roof Cement — Stove Putty
Plumbers Putty**

PAINTS and SPECIALTIES

WILLIAM CONNORS PAINT MFG. CO.
TROY NEW YORK

Established 1852
JAMES L. PERKINS
Western Distributor

140 S. Dearborn St., Chicago, Ill.

BOOMER

— that different
and better

STEEL FURNACE

WITH the demand for steel air-tight furnace construction the demand for the Boomer has grown.

It has all the usual qualities of high grade steel furnace design and construction *plus the greatly increased radiating surface of three large cast radiating flues.*

Because of this exclusive Boomer design it is *Soot, Gas and Smoke* consuming, making it more efficient and durable.

With the Boomer Steel Furnace your customers are assured of clean heating because of the scientific design of the radiating flues. The proportions cause even temperatures below the point which usually causes great expansion and contraction of cast iron.

It is the ideal furnace for high grade installation at a price that is favorable to customers.

Boomer dealers are having large profitable Boomer Steel Furnace sales.

Write for the BOOMER catalog today



THE HESS-SNYDER CO.-MASSILLON, OHIO.

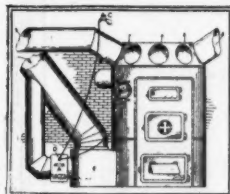
A-C [THERMOSTATICALLY CONTROLLED] AUTOMATIC FURNACE FAN

Positively no obstruction
to gravity system —

THE A-C fits in the by pass of any warm air furnace cold air return. It never interferes with gravity operation and is always ready to force the air in a natural way that causes no back draft or whirlpools.

It is the easiest to install, easiest to get at and easiest to operate—practically no attention needed by the home owner.

It is the only furnace fan that is *thermostatically controlled*. This big feature together with its many other features has put it on the map with a bang.



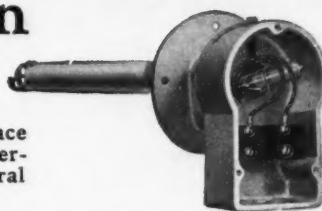
Every furnace owner a prospect

Unlike other fans it is *readily marketable*. Every furnace owner can be shown the advantages of forced air heating with the *Thermostatically Controlled A-C Fan*.

The Only One of Its Kind. *Thermostatic Control Warm Air Furnace Fan* licensed under Re. Pat. No. 15531, can be used only by the A-C Mfg. Co., of Pontiac, Ill.

Jobbers everywhere have quickly taken on the A-C Fan. Order through your jobber or write us for full information—use the coupon.

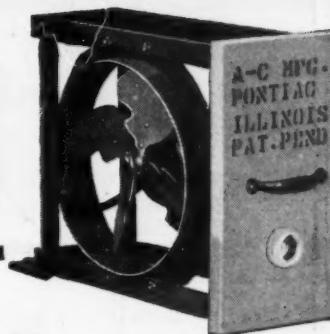
A-C Manufacturing Co.
417 Sherman St.—Pontiac, Ill.



Patented Mercury Control
Heat Booster

Four Blade Fan

Fan Unit—Emerson Motor



COMPLETE TO THE DEALER AT —

\$37⁵⁰

This is our No. 9 Fan Unit having 10 inch outlets and inlets. This number is the size for the smaller homes.

\$50⁰⁰

No. 12 Unit is of a larger size having 14 inch inlets and outlets and is designed for the larger homes.

ORDER FROM YOUR JOBBER

A-C MFG. CO., PONTIAC, ILL.
Send me complete details

Name

Street Town State

JOBBER'S NAME

Mention AMERICAN ARTISAN in your reply—Thank you!

Founded 1880

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Better
Warm Air Heating
and
Sheet Metal Work

American Artisan

The Warm Air Heating and Sheet Metal Journal

Yearly Subscription
Price:
United States\$2.00
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Published EVERY SATURDAY at 620 South Michigan Avenue, Chicago

ADVERTISING AND EDITORIAL STAFF

Etta Cohn Franklin Butler G. J. Duerr
J. F. Johnson Chas. E. Kennedy Frank McElwain

Eastern Representatives: M. M. Dwinell, J. S. Lovingham, 156 Fifth Avenue, New York City

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PITY PROPERLY PLACED

I pity no man because he has to work. If he is worth his salt, he will work. I envy the man who has a work worth doing and does it well. There never has been devised, and there never will be devised, any law which will enable a man to succeed save by the exercise of those qualities which have always been the prerequisites of success—the qualities of hard work, of keen intelligence, of unflinching will.—
THEODORE ROOSEVELT.



A Combined Service for The Sheet Metal Shop

*Concentrate Purchases through this One Source
and Save Time and Money*

SPECIAL heated storerooms protect the quality and finish of the hundreds of tons of sheets carried at Ryerson plants, ready for Immediate Shipment to the sheet metal shops. Whether you need a bundle or a ton, plain galvanized or special rust resisting sheets, your order will have our personal attention and will be delivered at once.

In addition, bars, angles, channels, rivets, bolts, etc., are furnished from the general steel departments. Beaders, turning machines, snips and all the many sheet metal tools are supplied by our Small Tools and Machinery Division. Combined shipments often save considerable time and money.

Use this combined service—let Ryerson carry your stocks, subject to immediate delivery.

Partial List of Sheets Carried in Stock

Ascoloy
Allegheny Metal
Black Steel
Blue Annealed
Galvanized

Silver Finish
"C" Pickled
Single Pickled
Deep Stamping
Patent Leveled

Uniform Blue
Wellsville Polished
Bill Poster's
Partition Steel

Electrical
Tool Steel
Lead Coated (Ternes)
Armco Ingot Iron

Armco Galvanized
Armco Enameling
Corrugated Armco
Corrugated Steel

WRITE FOR THE RYERSON JOURNAL AND STOCK LIST—"KEY" TO IMMEDIATE STEEL

JOSEPH T. RYERSON & SON INC.

Plants: Chicago, Milwaukee, St. Louis, Cincinnati, Detroit, Cleveland, Buffalo, Boston, Jersey City
Representation in: Minneapolis, Tulsa, Newark, New York,
Denver, Los Angeles, San Francisco

RYERSON

STEEL - SERVICE

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JOSEPH T. RYERSON & SON INC.

Plants: Chicago, Milwaukee, St. Louis, Cincinnati, Detroit, Cleveland, Buffalo, Boston, Jersey City
Representation in: Minneapolis, Tulsa, Newark, New York,
Denver, Los Angeles, San Francisco

RYERSON

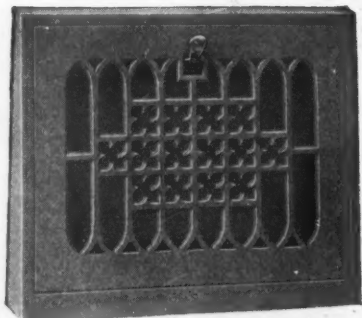
STEEL - SERVICE

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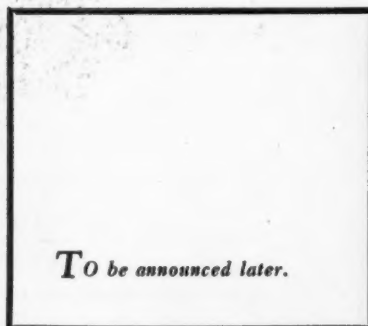
TUTTLE & BAILEY SUPER-REGS

REGISTERED U. S. PATENT OFFICE

NEW SUPER-REGS FOR 1929!



Tudor Design



To be announced later.



Classic Design

Ferrocrafft Registers for Baseboard and Sidewall

THIS is a new departure in register design. It is but a necessary step toward harmonizing the register with other modern home equipment. The fret-work is a FERROCRAFT Cast Grille, selected from the

Ferrocrafft Collection, which has won wide fame in the Architectural and Building fields. The two-piece construction with removable face is a cure for streaked walls and allows easy cleaning of duct. The same de-

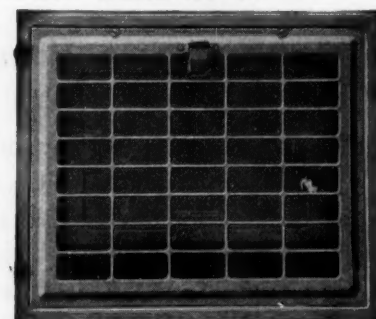
signs and construction are offered in both sidewall and baseboard Ferrocrafft Registers.

Two of the artistic designs are illustrated here. Another will be shown in an early issue. Watch for it!

Another New One for the Sidewall

A NEW non-streak two-piece Register for the sidewall. The first of its kind! Single valve; all steel. Made like a T&B Baseboard Register—allowing the same clean installation. The deep frames fit snugly into Stackhead. Stackhead edges can

be turned over on the Flange (border) just as in Style 902 T&B Baseboard Register. The Flange (border) can be stoutly fastened in one place, and screws are supplied. A good Register for good work—a remedy for unsightly walls.



Style 302 Sidewall Register

Tried and True SUPER-REGS

The T&B Line holds many old friends of the furnace man. He has known them for years as the kind of Registers that help to sell

more furnaces. Beautiful modern color finishes, strength, durability and mechanical perfection are outstanding features of Super-Regs.



Style 902 Baseboard Register



Style C "Cobble" Cold Air Face

TUTTLE & BAILEY MFG CO.

Established 1846

441 Lexington Avenue, New York City

Chicago

Boston

Kansas City

Bridgeburg, Ont.

Say you saw it in AMERICAN ARTISAN—Thank you!



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CHICAGO, FEBRUARY 9, 1929

No. 6

Wisconsin Sheet Metal Men Get Down to Bed Rock on What's Wrong with Industry

*Fifteenth Annual Convention at Milwaukee
February 4 and 5 a Phenomenal Success*

By GEORGE DUERR

THE PATH of progress leads ever onward, ever upward. That is as true in the sheet metal and warm air heating industry as it is in other industries and professions. Did one require a convincing reminder of this fact, one needed only be in attendance at the business sessions of the Master Sheet Metal Contractors' Association of Wisconsin, in session at its 15th annual convention at the Hotel Schroeder, Milwaukee, February 4 and 5, to become thoroughly cognizant of the fact that the sheet metal men as a whole and the Wisconsin contractors in that profession in particular are awake and alive to and working for the best interests of the industry. And more than that—they have shown their willingness to dig down and bring to light the evils of the industry, and to stamp them out insofar as is humanly possible.

Those who missed that convention missed a wonderful opportunity to have demonstrated to them the power of coöperative effort. To have proved beyond all possibility of doubt that groups of men having common problems to face can meet them in a far more effective manner when working collectively than they could ever hope to do singly. They missed more than that; they missed that most beautiful of all things—the experiencing of the expression of that fine democratic spirit among men which goes so far in pouring oil upon the troubled waters of the sea of business,

fraught as it is with so much hatred, jealousy, and so many hardships.

Deputy District Attorney Has High Words of Praise

First came the address of welcome by A. J. Beyer, Deputy Dis-

trict Attorney of Milwaukee. The District Attorney himself, George F. Bowman, was to have represented Mayor Hoan of Milwaukee, at the meeting, but an important case prevented him from being present. Mr. Beyer, however, proved himself an excellent substitute in greeting the sheet metal contractors and extending to them a most sincere and hearty welcome. At the close of

his address, Mr. Beyer received an ovation which proved to him that his words of greeting and welcome were as sincerely appreciated as they had been sent forth. Then came the response by President Cecil C. Tolg and also his annual report which contained a concise report of the activities in which the association had been engaged during the year. This review showed how closely knit the Wisconsin men are and how thoroughly they believe in organized effort.

Secretary Walter A. Belau's and Treasurer Alfred C. Goethel's reports were read and approved at this time. These reports were followed by those of the Industrial Education Committee, the Overhead Burden Committee, and the Ways and Means Committee, given by O. Geussenhainer, R. Jeske, and Paul L. Biersach, the respective chairmen of these committees.

Mr. Jeske in his report presented a recommendation by the committee that the association consider the hiring of a paid secretary. This matter will be taken up by the Board of Directors at their next meeting, and during the election of officers in the afternoon session the office of secretary was not included pending the action of the Board of Directors.

Mr. Biersach recommended that the Ways and Means Committee be done away with, as the need for such a committee no longer exists, in his opinion.

Officers Elected for the Coming Year

President, Henry Geussenhainer, Sheboygan.

First V. P., L. F. Reinke, Milwaukee.

Second V. P., N. Ording, Sheboygan.

Third V. P., H. A. Gerke, Shawano.

Fourth V. P., George Bishoff, Marinette.

Fifth V. P., J. R. Suettinger, Two Rivers.

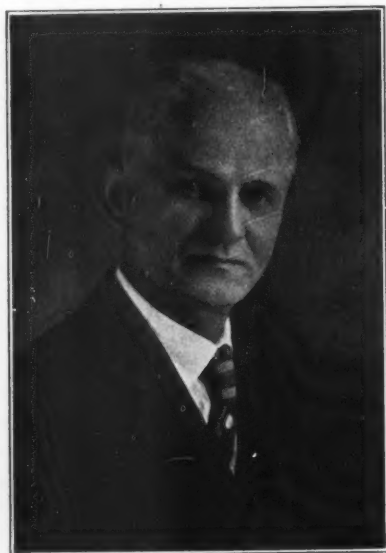
Treasurer, Alfred Goethel, Milwaukee.

Sergeant-at-Arms, August Zindars, Oconomowoc.

Secretary, left to Board of Directors for appointment.

trict Attorney of Milwaukee. The District Attorney himself, George F. Bowman, was to have represented Mayor Hoan of Milwaukee, at the meeting, but an important case prevented him from being present. Mr. Beyer, however, proved himself an excellent substitute in greeting the sheet metal contractors and extending to them a most sincere and hearty welcome. At the close of

Mr. Geussenhainer revealed the fact that the increased use of sheet metal has brought about the increased need for trained sheet metal workers which are not now being



Paul L. Biersach, Milwaukee,
Director

provided in large enough numbers to offset the need. And this for the reason that the Wisconsin apprenticeship law is not understood and consequently not popular. He urged all members to write to the Industrial Commission at Madison for complete particulars concerning the law and to study them, with the aim in view toward alleviating a situation with regard to the shortage of skilled labor which might possibly lead at some future date to much embarrassment for the employers if allowed to go as it is.

Mr. Geussenhainer has given this problem of apprenticeship training a great deal of time and study and his views and opinion on it are greatly respected by all in the industry.

Harms, Markle, Reinick and Hersig Send Regrets

Communications of regret for their inability to be present at the meeting were received from George Harms, Peoria; W. C. Markle, Pittsburgh; L. Hersig, Madison, and Frank Reinick, also of Madison.

The Question Box, that vehicle by which members are given an op-

portunity to benefit by the knowledge and experience of others, was opened.

"How can a leak in a cornice be eliminated which is caused by warm air getting into the cornice and condensing?" That was the first question read.

The answer was, "Put vent holes at regular intervals at the bottom, and install ventilators, one about every 20 feet, on top. This will carry off the warm air getting into

Is the Quantity Survey Bureau Feasible in Sheet Metal Contracting?

"Would a quantity survey bureau be an advantage to the association members? Would it be worth its cost?"

It was thought that in the larger cities the establishment of a quantity survey bureau might be feasible, but it would be entirely impractical and unsupportable in the smaller communities. The big need is to impress architects with the necessity for including all details regarding the sheet metal work to be done on the blue prints so as to enable the sheet metal contractor to make accurate estimates.

the cornice before it has a chance to condense." The warm air often gets into the cornice through crevices caused by the shrinkage of the wooden joists. Many men spoke of having experienced the leaking cornice caused by condensation of the warm air in them, and the application of a ventilator always proved a sure corrective.

Insurance Rate Reduction Discussed

"Why can't insurance rates be reduced for sheet metal contractors to a point where they are more in line with the rates to masons and carpenters whose hazards are about the same as those of the sheet metal contractors?"

In order to answer the question Mr. Bogenberger, newly elected President of the Milwaukee local,

presented the method used in determining the rate of insurance charged. This rate, it appears, is based upon the accident record within the industry during the preceding year; that is, the rate charged during the year 1929 is based upon the accident experience record in the sheet metal industry for 1928. The rate fluctuates from year to year, going up or down in direct proportion to the number of accidents experienced during the previous year. Therefore, the only way that the rate can be reduced to any industry is by lessening the accident frequency—guard machines and take all possible precautionary measures to avoid accidents. Mr. Bogenberger further enlightened his audience by stating that the state of Wisconsin and not, as commonly supposed, the insurance company sets the maximum rate that can be charged. And in doing this the state takes into consideration the financial standing of the company. The company itself determines the minimum rate.

Recognizing the fact that this practice of applying the same rate to all firms for a certain classifica-



Frank Reinick, Madison, Past
President

tion in a given industry, unduly penalizes the man who takes all precautions to avoid accidents and automatically places him on a par with the careless or slipshod em-

ployer, the state and the insurance companies are endeavoring to extend or modify the application of their rates so as to give the man using every possible precaution to avoid accidents to his workmen the full benefit which accrues to him by reason of the care which he exercised in avoiding accidents. In other words, it is the desire of the commission so to arrange matters that the rate of insurance which any given sheet metal contractor will pay will be based largely upon his own accident record. In this way the inequality which now exists will be minimized, and the careful employer will be rewarded in the form of a lower rate for his prudence.

Obtaining Material Benefit from Association

"Why do members not obtain more material benefit from their association?"

No association member should expect to derive a direct material benefit from membership in an association. The benefits must of necessity be indirect. "The faults of the industry are the faults of human nature," said Mr. Geussenhainer, and those faults cannot be entirely corrected as long as human nature re-



William Gerke, Sheboygan, Past President

mains the same." Those words are worthy of a Socrates himself. How true they ring and how clearly they are based upon a thorough knowledge and understanding of human

nature stripped of all its artificiality and pretense.

"Would a Quantity Survey Bureau be an advantage to its members? Would it be worth its cost?"

Mr. Pansch of Racine was of the opinion that it might work out in the larger cities, but would be found unsupportable in small towns.

Mr. Bogenberger said that in reading plans of architects a "ques-

Here's One on Much Mooted Question of Insurance Rates Reduction

"Why can't insurance rates be reduced for sheet metal contractors to a point where they are more in line with the rates to masons and carpenters, whose hazards are about the same as those of the sheet metal contractor?"

Answered on convention floor. Insurance rates are based upon accident frequency rate during the preceding year, and the hazard involved has very little to do with the rate making. If the experience during any given year shows that accidents were numerous in the outside sheet metal classification, the rates on this classification for the next year are going to be proportionately higher.

timer" instead of an estimator was needed, and that the architect should have the fact impressed upon him in some manner that full details on the sheet metal work is just as necessary as full details on any other phase of the work. That it is not enough for the architect to say, "cornice, roofing and other necessary sheet metal work." The association should take steps to impress architects with this omission on their part.

Those are some of the more outstanding questions around which the discussion revolved, showing that these Wisconsin men are thinkers.

Jack Stowell, special representative of the National Warm Air Heating Association, presented a very interesting talk on the aims,

objects and accomplishments of that association in an endeavor to show warm air furnace men why they should become coöperative members



Louis Hersig, Madison, Chairman Legislative Committee

in the National Warm Air Heating Association, and still further in an endeavor to show in what way the association is trying to help furnace installers, Jack presented a problem in heating a brick veneer bungalow by way of teaching the correct application of the Standard Code. Many questions were asked, showing that a genuine interest in the research work has been and is being aroused.

J. Harvey Manny, a member of the Better Business Committee of the National Warm Air Heating Association, made a direct appeal for cooperative memberships in the Association. An appeal which should not go unheeded by any warm air furnace installer.

C. D. Brown of Klau-Van-Pietersom-Dunlap-Younggreen, Inc., Milwaukee, gave a most interesting talk on the purposes and possibilities of advertising. By way of explanation of what advertising is, Mr. Brown said that advertising is a mode of education by means of which products are brought into demand. The advertiser pays not for printer's ink and paper, but for the creation of

a certain effect on peoples' minds. This complete talk will be published in full later.

The attendance prizes for the morning session were taken by R. Jeske, Paul L. Biersach and E. J. Kepke. Those in the afternoon, by

Question Asked at Wisconsin Sheet Metal Contractors' Convention

"How can a leak in a cornice be eliminated which is caused by warm air getting into the cornice and condensing?"

Answered from convention floor. Put vent holes at regular intervals at the bottom of the cornice, and then install ventilators at the top of the cornice, one about every twenty feet. These ventilators will carry off the warm air before it has a chance to condense. Thorough insulation so as to prevent the warm air getting into the cornice would also be effective.

J. R. Goethel, E. B. Tonnesen, and Paul L. Biersach.

The election of officers resulted as follows:

President, H. Geussenhainer, Sheboygan.

First Vice Pres., L. F. Reinke, Milwaukee.

Second Vice Pres., N. Ordning, Sheboygan.

Third Vice Pres., H. A. Gerke, Shawano.

Fourth Vice Pres., George Bishoff, Marinette.

Fifth Vice Pres., J. R. Suettinger, Two Rivers.

Treasurer, Alfred Goethel, Milwaukee.

Sergeant-at-Arms, August Zindars, Oconomowac.

As mentioned previously, the Secretaryship was left open for the consideration of the Board of Directors, Walter A. Belau, present incumbent of that office having signified that he no longer wished the office. The question of payment for the services of the secretary will also be discussed by the Board of Directors.

The Convention Committee, consisting of H. Geussenhainer, L. F. Reinke, Alfred Goethel, Paul L. Biersach and Walter A. Belau, deserves special mention for the very creditable manner in which the convention was staged. It was complete in every respect, not excluding the selection of the hotel.

Breiel Urges Cooperation With Jobber

The morning session of Tuesday opened with a well filled hall, and the first speaker on the program was G. W. Breiel of the American Rolling Mill Company, representing about sixty or more jobbing houses throughout the country which handle Armco products.

After first telling a very good story which very nicely illustrated the advantages of cooperation, Mr. Breiel began his talk by pointing out that the real competition with which the sheet metal industry is faced today is not internal but rather external competition. "It is a matter of one entire industry competing against another industry," said he. "One industry having a similar product to that of the other and making inroads and serious encroachments upon the business of the first with that product is the real competition today. And this is the competition which the sheet metal industry must fight against through its combined forces." Numerous examples of this type of competition were given by Mr. Breiel.

Points Out Why Jobber Is Essential to Contractor

Having thus introduced his subject, Mr. Breiel made a strong plea that the sheet metal contractors do everything in their power to support the jobber. "Regardless of all the talk one hears to the contrary, said he, 'the jobber is essential to the sheet metal trade. In the first place he carries a complete stock upon which the contractor can draw at any time on short notice, which makes it unnecessary for the sheet metal contractor to carry large inventories himself. The jobber gives a credit service to contractors without which many of them would be

seriously hampered in carrying on their businesses. The jobbers' salesmen give the contractors valuable tips on how to go after business and on where business is apt to originate.

These and many other services which the jobber gives to the contractor prove that he is a necessary link in the chain of distribution. He renders local services to the sheet metal contractor which the manufacturer, who is primarily interested in manufacturing the product, cannot possibly give, and they are services for which the jobber deserves full credit."

From showing why the jobber is essential and therefore deserves the support of the sheet metal contractor, Mr. Breiel reviewed the association work that is being done. He paid a high compliment to the Wisconsin men for their progressiveness, as indicated by the many things which their association has already done in a collective way for the good of the industry.

In pointing out how the association can go still further in this di-

What Has Been Your Experience?

We have a letter from one of our subscribers which reads as follows:

"We are contemplating building metal garages and would appreciate it if you would send us any details that you may have at hand that would likely be valuable to us, such as articles on same, photographs or sketches, working drawings, information on special machinery that is used for this work, etc."

Can any of our readers help him out? Your replies addressed to us will be forwarded to him promptly and we know will be appreciated.

rection, Mr. Breiel raised the question as to whether it were not just a little too easy for the sheet metal worker to go into business for himself, and whether or not in going into business for himself he did not

overlook the responsibility he was incurring by so doing. Mr. Breiel pointed to education as the most effective measure of correction for this evil, and also to the fact that in this respect the association can do a great deal, particularly in the way of teaching the contractor to figure costs. He also called attention to the work along this line which such bodies as the Sheet Steel Trade Extension Committee, the Copper & Brass Research Association and the American Zinc Institute are doing, and to the individual efforts which the American Rolling Mill Company is making in such things as the production of the pamphlets on blue print reading, cost accounting which are available to the contractor for the asking.

Mr. Breiel closed his very interesting address by saying that there is nothing in the various anti-trust laws which prohibits a man from getting a fair price for his work with which he is enabled to carry on his business successfully and with credit to the industry.

George Thesmacher Unable to Be Present

George Thesmacher, The Riester & Thesmacher Company, sheet metal contractors of Cleveland, Ohio, was scheduled to make an address on the Sheet Metal Contractor of Today. Mr. Thesmacher was unable to get to Milwaukee, a fact that was regretted very much by all present, as they all know Mr. Thesmacher and know what a dynamic speaker he is.

R. G. Olson, manager of the Milwaukee office, the American Blower Company, presented a very interesting address on the business possibilities in the ventilation field for the sheet metal contractor, enumerating a list of 42 distinct and specific uses in which ventilation has proved a boon for the health of the people congregating in those places.

Mr. Olson's definition of what constitutes an air change was very interesting, and in this connection he pointed out that the location of the inlets and outlets for the air have an important bearing upon whether air change and ventilation is secured

or not. Air seeks the path of the least resistance and therefore the avoidance of air pockets in the room is the all-important thing to consider once the size of the ventilating system required to take care of the needs of the room have been determined.

In general, Mr. Olson explained that the propellor type of fan should not be used with duct work, except possibly where the ducts are straight and not over twenty-five or thirty feet in length. Where duct work is used with a ventilating system the sirroco type fan should always be

What Is Best Method of Advertising?

"What method of advertising sheet metal and warm air furnace work is apt to be most advantageous to the sheet metal contractor?"

Answered from the convention floor. A policy of fair dealing, courteous treatment and the best of workmanship is the best advertising that any firm can get and it costs very little.

A plan of sending out a letter once a month to a selected list of prospects has proved a potential business producer for one sheet metal contractor.

used. The talk by Mr. Olson created a great deal of discussion regarding the performance of different types of fans and blowers, which resulted in much good for those who had the pleasure of hearing it.

How Advertise a Business to Best Advantage?

The question box was then opened. *"What method of advertising sheet metal and warm air furnace work is apt to be most advantageous to the sheet metal contractor?"*

Henry Geussenhainer, newly elected president of the association, stated in answer to this question that a policy of fair dealing toward the customers and seeing to it that work is always done in the best possible manner is the best advertising that a firm can get. It produces

more business than almost any other method and the beautiful part about it is that it doesn't cost anything. The satisfied customer tells his friends while they in turn tell their friends and the business rolls in.

Walter A. Belau, former secretary of the association, stated that his firm had adopted a plan whereby they send out a letter a month to a selected list of prospects, which is producing good results. This plan, stated Mr. Belau, has the advantage of keeping the firm and its products and services constantly before potential buyers. Then when they have need for that service they naturally turn to the firm which is uppermost in their mind.

"How can the costs of running a business be arrived at?" was another question which was given a great deal of consideration.

Jack Stowell, Aurora, Illinois, gave a blackboard demonstration on the figuring of overhead costs, which brought out the necessity of getting all costs into overhead charges that properly belong there.

A letter containing a check for \$150 in payment of the yearly dues of the Madison sheet metal contractors was received and read at the convention, which brought forth a great deal of cheering.

The attendance prizes were won by Joe Cunningham, E. J. Kepke, and John Petry.

The afternoon program was opened with an address by a representative of the Northwestern Mutual Life Insurance Company, who gave a very interesting discourse on the desirability of business insurance. He pointed out some of the hardships which a business can experience in the event that a partner or an important executive is killed or dies suddenly and how easily much of the loss that occurs to business from this source can be made up by having important executives and partners insured. Stress was laid upon the necessity of the partners to a business making it their business to see to it that proper articles of co-partnership were drawn up, so that in case of the demise of either one or the other member a

definite understanding will exist regarding the disposition of the business.

The remainder of the afternoon was given up to general discussion by all members present. Roofing, cornices and ventilating were the topics of discussion, and the burden of the talk revolved around the best methods to bring these important phases of the sheet metal industry back to what they once were.

The entire convention was indeed a most successful affair.

The banquet was indeed a gorgeous affair. Paul L. Biersach, president of the National Association of Sheet Metal Contractors, was the toastmaster, and a most talented major domo of the banquet he turned out to be, keeping the folks in attendance in an uproar during most of the time. A feature which made the banquet even more enjoyable than ever was the fact that the ladies had been invited to the convention and a great many took advantage of the invitation.

Louis Reinke displayed his genius by writing new words to some of the old tunes, and these were sung at the banquet with all the heart and soul that the men and women could put into them, which was considerable. Louis Reinke is to be congratulated, as is the entire convention committee, for the splendid manner in which the convention was staged. The women were given beautiful souvenirs in the form of salt and pepper shakers.

Among those called on at the banquet by the toastmaster were Otto Geussenhainer; his son, Henry Geussenhainer, who was elected president of the association; G. W. Breiel, representative of the American Rolling Mill Company; Past President C. C. Tolg, Secretary Walter A. Belau, Herb Symonds of St. Louis, who brought greetings from the sheet metal men and women of the city surrounded by the United States, and Miss Etta Cohn, manager of AMERICAN ARTISAN, speaking for the trade press.

A part of the entertainment for the ladies during their stay at the convention also included trips to the

theater on two successive afternoons.

And now a word about the annual year book and program which was gotten out for the convention. It was indeed an excellent feature of the convention, and the committee having its production in hand is also to be congratulated.

All that can be said about the convention is that those who missed being there missed a very good meeting from first to last.

**A. J. Abels, Buffalo,
to Handle Electric City
Gutter Former**

A. J. Abels, manufacturer and distributor of specialties, 33 Chandler Street, Buffalo, New York, has announced that the manufacture of the Electric City Gutter Former, the Sterling Beader and accessories will henceforth be carried on by himself. Mr. Abels was formerly associated with the Forming Machine Corporation, which made this equipment.

Repairs and replacements of maple jaws and other wooden parts for the Double Truss Cornice Brake will also be available through Mr. Abels, as will some of the other metal parts. Price lists may be had upon request.

**B. & F. Mfg. Co.,
Des Moines, Iowa,
Has New Asbestos Covering**

The B. & F. Manufacturing Company, Youngerman Building, Des Moines, Iowa, makers of liquid furnace cements, has recently issued a circular describing their asbestos covering No. 22, which is manufactured and shipped to the customer in dry form, to be made into mortar by mixing to the proper consistency with water.

Asbestos No. 22, says the manufacturer, is a splendid insulation for every kind of a heating plant.

The colors are in a powder form and are shipped separately and may be mixed with the covering before applying the material. In this way the dealer may order such colors as desired to keep on hand to be used at any time they are needed.

Asbestos No. 22 may be applied to a suitable thickness to prove thoroughly satisfactory as an insulation, it is practical to apply 1/32 of an inch to 1 inch in thickness, depending entirely upon the conditions existing to that individual heating plant.

The use of asbestos No. 22 is very economical in cost, says the manufacturer, as it is light in weight and has a very high insulation value, the appliance of this material to any heating plant assures the user of economical fuel consumption.

The B. & F. Mfg. Co. has moved its offices to the Youngerman building, Des Moines, Iowa, and is now in better shape to take care of a much larger business during the season of 1929.

**E. C. Dunning
to Represent L. J.
Mueller Furnace Co.**

Ellsworth C. Dunning, whom everyone up Wisconsin way knows, is now with the L. J. Mueller Furnace Company, Milwaukee, Wisconsin, as a special factory representative, calling on the jobbing



E. C. Dunning

trade, quantity buyers and the company branches.

Mr. Dunning has had a great deal of experience in all branches of selling in the warm air heating trade and is known throughout Wisconsin, Illinois and Iowa. His connection with L. J. Mueller Furnace Company should prove mutually profitable to the company and to him.

Showing How to Construct a Pattern for a Circular Hopper

Such Work Often Met with in Catering to Manufacturing Plant Trade

By O. W. KOTHE, Principal St. Louis Technical Institute

NOT long ago a certain shop owner was in to see me about manufacturing a certain appliance and he wondered how he could do it without getting into a lawsuit with another company. So I roughed out a few sketches for him where improvements could be made and which would certainly give him a legal right to a patent.

This is also one of the special problems by J. S. Redman, who contributed it out of his daily work. His text follows:

In the upper right hand corner of the drawing marked "General Arrangement" are shown the drawings for hopper. There are no dimensions on this drawing, but it is taken from a general erection print.

To lay out the patterns for such a job, first erect the horizontal A-C of indefinite length. For the center line of the plan make the distance A-C the radius of the top section of the hopper and strike out a semi-circle. Drawing the vertical line B-B of indefinite length. At right angles to B-B draw the lines B-D of the required length, then erect the line D-D. To the right of the plan erect another view of the plan shown turned half way around and call it the front plan.

As the hopper is the same in every respect only one-half of each side of the center line is needed. Below the plan and the front plan erect the line T-T parallel with the line A-C of the plan. Extend the line D-D of the plan down to the side elevation and erect the heights of the different sections as R-K'-D-U. Parallel with the line U-R draw the line O-P and parallel with the line T-T draw the lines D-B-C and K'-K-S and the lines T-C and C-R. This is the outline of the side elevation.

To the right of the side elevation

erect the vertical center line T-R. Extend the line D-C of the side elevation over to the front elevation, and locate the line D'-D, the required width of the hopper at this section. Erect the vertical line O-B'. From B' a portion of the top section of the hopper is to be cut away to a slope of 45 degrees, so draw B'-4' at 45 degrees and erect the vertical line D-H of the conical section, which is also cut away.

As the back of the cone is a 45-degree taper, lay out the line H-K at 45 degrees. As the line S-K'-R are at right angles from the front elevation, the front of the bottom section of the hopper will be a semi-circle of the same radius, as K-S, so in the side elevation from the point K erect a line K-N parallel with the line R-S and through N draw the horizontal line to the center line of the front elevation and locate the point N' and draw the radius N'-R and the vertical line K-N. This completes the outlines of the front elevation.

Divisions of Surfaces

In the front elevation extend the line H-D-4', which is the flat portion of the cone, and the top section upward to the front plan, and locate the line 4-E. Also locate the line 4-E in the plan. Now with the dividers step off 9 equal spaces in the plan from B-C and number the first 4 spaces B-1-2-3-4. From these points draw lines to the center A, and from these same points drop vertical lines down to the horizontal line D-B-C of the side elevation. Number them B-1-2-3-4. Now extend the line O-B-K to the line R-C and locate point P, the apex of the cone. Draw the lines from the base line D-B-C of the cone and through the points 1-2-3-4 to the apex P. In the front plan from B to 4 on

the circle lay out four equal spaces and number them 1-2-3-4. From these points draw vertical lines to the line B'-4' of the front elevation and number them B'-1'-2'-3'-4'. Extend horizontal lines from these points over to the side elevation to similarly numbered lines and locate points B'-1'-2'-3'-4'. Draw a curved line through these points and through B'-F. This will be the line of intersection for the top section of the hopper and the bent side plates.

Now in the plan where the line E-4, which represents the side plate, crosses the radial lines drawn from the center A to the circle locate points 1''-2''-3'' and drop vertical lines from these points down to the side elevation on to similarly numbered lines drawn from the base line of the cone to the apex and locate points 1''-2''-3''. Now draw the curve through the points B''-1''-2''-3''-4 and the straight line B''-F'. This will be the line of intersection between the side plate and the cone.

Now draw the horizontal lines from B''-1''-2''-3'' over to the line C-R, and locate the points B-1-2-3. From the points B''-1''-2''-3'' erect vertical lines up to the line D-B-C and locate the points a-b-c. We can now lay out the patterns for all the plates.

Laying Out the Patterns

In Fig. 3 erect the horizontal lines D-4-C and U-4-T the required distance apart, making O to T one-fourth of the circumference. Make the flat part O-U the same as the flat part in the plans or elevation. Square up the plate and draw lines T-C and U-D. From O to T lay out nine equal spaces the same as in the plans and number the first four spaces O-1-2-3-4. Through these points drop vertical lines. Take the lengths of these lines from

plate P 2 L at Fig. 4. Set the trammels to P-C and P-S of the side elevation and draw the two curves in Fig. 4, making B-C one-fourth the circumference around the curve. At right angles to line B-K draw lines B-D and K-K' equal to B-D of the plan. Then draw line D-K'. From B to C lay out nine equal spaces and draw lines to the apex. Number the first five lines as B-1-2-3-4. In the side elevation take the lengths of P to B-1-2-3-4 along the line P-C and transfer them to similarly numbered lines in Fig. 4 and locate points B'-1'-2'-3'. Draw a curve through these points and draw the line F'-B' at right angles to line B-K. The outer portion around this curve is punched out. Allow for flanging around the curve from C to 4. No lap is required on this pattern. As line C'-S is the center of the butt joint, turn this pattern over and mark one off.

Continuing with Construction of Pattern

Now take pattern for plate PR and PL. At Fig. 2 draw the line D-4 equal in length to D-4 of the side elevation and parallel to D-4 draw the horizontal line V-4'. Make D-V equal to D-V of the front elevation. Draw the vertical line 4-4' and extend the line V-D above and below the two horizontal lines. Now in the side elevation at points of intersection between the cone and side plates, as 1"-2"-3", erect vertical lines to the base line of the cone, B-C, and locate points a-b-c. Now transfer the spaces D-B-a-b-c-4 of the side elevation to Fig. 2, as shown, and locate similarly lettered points from D to 4. Through these points drop vertical lines downward. Take the length of line D-F'; B-B", a-1", b-2" and c-3" of the side elevation and transfer them to similarly lettered lines in Fig. 2. Draw a curve through the points 4-3"-2"-1"-B" and F'. This curve is the flange line.

Now take the spaces V-f-g-h-k and 4' of the side elevation and transfer them to the line V-4', Fig. 2, and letter them the same. Through these points erect vertical lines upward. As the side plate is

bent to 45 degrees on the line V-4', Fig. 2, the lengths of the vertical lines just drawn will be obtained from the front elevation. So take the distance 4'-B' and transfer it to Fig. 2, as f-B' and 4'-1' front elevation to Fig. 2 and g-1' and so forth till all the lengths have been transferred to the pattern Fig. 2. Draw the curve through points 4'-3'-2'-1'-B'-F'. This curve will be the flange line.

Allowance for flanging is made all around the pattern, except on the front F to F', which connects on to the angle iron. There will be two required of this type.

We will lay out the bottom section P3, which is the discharge end of the hopper. At Fig. 1 is shown a plan and elevation, also an oblique view. The elevation is exactly the same as the side elevation shown and lettered S-K'-N and R. Draw the horizontal S'-M above the elevation, Fig. 1, and project the vertical lines K'-R up to the plan and draw the vertical line M-X.

Take the radius K-S or K-G from the side or front elevation and set it down in Fig. 1 as S' to L. Through L drop a vertical line to the plan and locate 1'. On the line M-S' about the center L strike a circle and from X draw a horizontal line over to the vertical line drawn through L and locate point 1.

With the dividers step off on the circle from 1 to S' five equal spaces and number them 1-2-3-4-5-S'. Through these points draw horizontal lines over the line L-1, and locate points O-X-Y and Z and vertical lines down to the elevation and locate points 1'-2'-3'-4'-5' on the line K'-S. Through these points and parallel with the line S-R draw lines to the line K'-R and locate points N'-a-b-c-d.

A True Circle Formed by Pattern Section

As this section of the hopper is a true circle on the top of K'-S and the front K'-R, another view is necessary that will show the shape to which it will be rolled and from which the length can be obtained. So extend the line S-R and locate R' at right angles to this line.

Draw the line R'-L'. Extend the lines just drawn as 1'-N and 2'-a and so forth of the elevation to the line R'-L' and locate points A-B-C-D-E. Now take the distance L to 1 of the plan and transfer it to the oblique view as L' to K and A to 1 and draw line K to 1. Transfer L-Z of the plan to B-2, L-Y of the plan to C-3. L-X of the plan to D-4 and L-O of the plan to E-5. Now draw a neat curve through the points 1-2-3-4-5-R', and this will be the shape of this section of the hopper on a line at right angles to S-R and through K' of the elevation. From this view the lengths will be obtained for laying out the pattern for the plate.

Now extend this line through K' and locate R". Take the lengths measured around the curve of the spaces R' to K and transfer them to line R"-K", starting at R", and locate points 5-4-3-2-1-K". Through these points at right angles to line R"-K" draw lines as shown. At right angles to S-R of the elevation and through points of intersection extend lines to similarly numbered lines in the pattern and locate the numbered and lettered points as shown. Draw a curve through these points and allow enough material around the outside of the pattern from K" to S" for flanging. This completed half the pattern."

W. C. Scott, Sheet Metal Metropolis, Ill., Moves to Larger Quarters

The W. C. Scott Sheet Metal Works, 212 West 6th Street, Metropolis, Illinois, is the present address of that progressive company. They were formerly located at 10th and Ferry Streets, but have now moved into the business district of Metropolis and into larger quarters, where they now have more room to display their goods to advantage.

Mr. W. C. Scott, proprietor, states that they have added a large number of tools and much new machinery to their plant so as to be in a better position to take care of the ever increasing business that is coming into the shop of the firm.

Making the Most Out of Sheet Metal Contracting

Revealing Some of the More Outstanding Principles to Which Sheet Metal Contractors Must Adhere for Success

By BENNET CHAPPLE, JR., Development Department American Rolling Mill Co.*

MAKING the most out of sheet metal contracting is a mighty interesting subject to us all. For those of us who are in the sheet metal business, making the most out of that business is one of the important parts of our making the most out of our life.

Life, you know, is a story of accomplishment. In this business we are in today we find the competition keen; we find that average effort brings less than average results; we find that to make the most out of sheet metal contracting we have to have an understanding which enables us to meet the problems of today, and a foresight which enables us to anticipate the problems of tomorrow.

And in sheet metal contracting, as in every other line of work, he profits most who serves best. Rewards of the business world come, not to him who can take the most, but to him who can give the most to his fellowmen. Henry Ford has grown to be perhaps the richest man in America, and yet no one grudges him his wealth, for everyone can see that the contributions he has made in society are so great that the enormous fortune that has come to him as a result is merely incidental.

Merchant of Today Builds Himself into Community

The successful contractor, like every other successful business man, builds himself into his community. He is known as a leader in many things. He takes part in civic drives; perhaps he is interested in Boy Scout work; probably he joins a luncheon club; if he is a church man he makes himself active in church work, or if he is a lodge member he puts himself into the

work of the lodge, bringing attention to himself and establishing a reputation for trustworthiness in leadership in those fields of activity where the test is not, "How much can I get?" but "How much can I give?"

Must Know How to Handle Men—A Real Study

Then, in the business world, the successful contractor must be something of a prophet and something of a preacher. One of his biggest jobs is to sell the service of sheet metal in general to his community. If he wants to see more sheet metal used, it is up to him to talk sheet metal to people he meets—point out to them that there is no other material which dollar for dollar gives so much service for all of the places where sheet metal is used, and where one form of new material or another tends to encroach on his business, and cut down the total amount of contracts which he can secure. He needs to go about with the missionary enthusiasm, getting people interested in sheet metal. Then as a result, when people think of sheet metal at all they will think of him.

Then comes the conduct of his own business. First of all, in day by day affairs, the successful contractor knows how to handle men. Probably the first principle of his handling of men is to hire men who don't have to be watched. It is only in political jobs that men can afford to stand around to make sure that somebody else is doing the work. Those of us who are in business for ourselves, in business to make money, in business to enjoy life more fully, can't spare the time to be checking up on somebody else. So above all things we must have those around us who can be trusted to go ahead, trusted to do their job and do it right.

And that brings up the second

point—the successful contractor hires men who know their trade. He gets men whose work is so good that every job they do is a recommendation for his shop. When you have men like that you have something to work with—you have a real opportunity to interest them in their job. Most of us are interested in the things we are doing, in the first place because we like it, and in the second place because we see that it is getting us somewhere.

In handling his men, the successful contractor has to help them to get somewhere. Ofttimes it will be his privilege to point out to them that really they get somewhere faster working for him than launching out on their own. Maybe that, as years go by, he will need to devise a profit-sharing plan, or partnership, or branch shops, or some other arrangement to provide an outlet and a future for his best men.

Such things are not often done in the sheet metal business, and the fact that they are not is, I believe, one of the reasons that we have too many independent shops—too many sheet metal contractors who are going on their own, because the master of his shop did not have the foresight to keep these vigorous, energetic, ambitious men in business with him instead of letting them out to create competition.

Giving Men Courses of Instruction

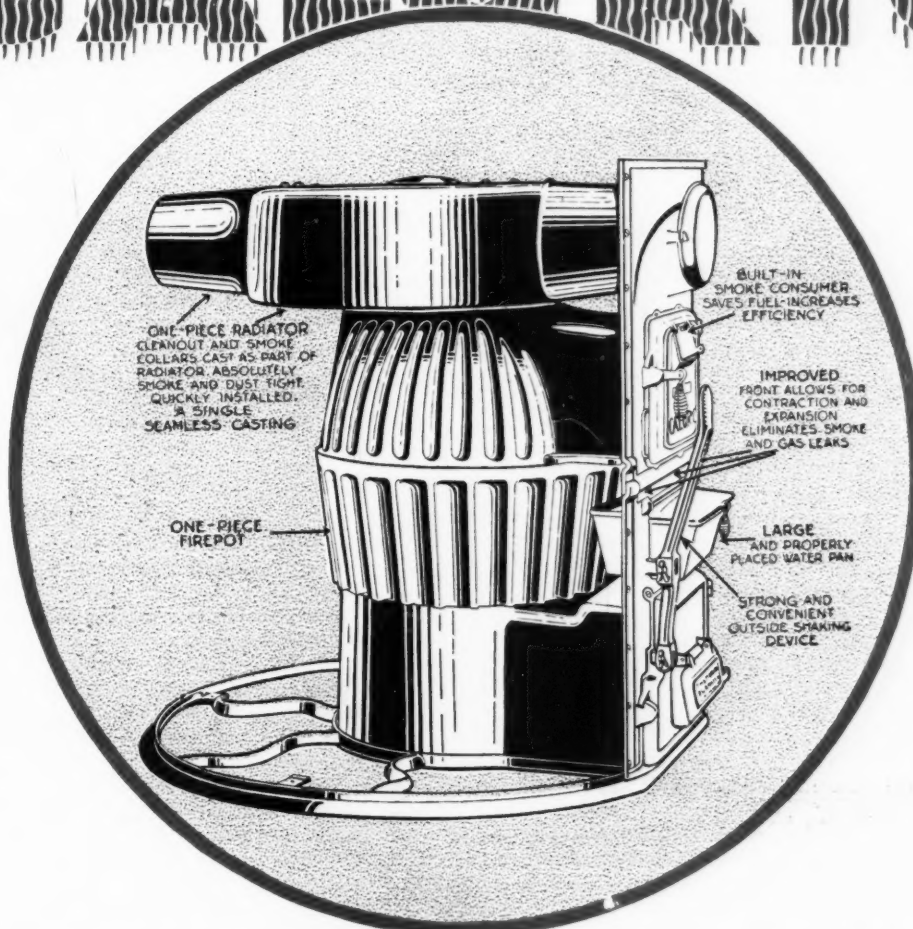
And so the successful contractor helps his men to get ahead. Perhaps he teaches them the fundamentals of blueprint reading, or, more important, the principles of pattern making. If it is blueprint reading he is learning, for instance, he can secure from the Ingot Iron Shops a very clear little text book—one for each man, and all at no cost.

Many contractors have these classes in the evening, particularly

(Continued on Page 64)

*Address delivered at the convention of the Indiana Sheet Metal and Warm Air Heating Contractors Association held in the Denison Hotel, Indianapolis, January 22 to 24, 1929.

CALORIC



THE NAME AND THE FURNACE BOTH STAND OUT

THERE is probably no trade name applied to heating apparatus that is more widely known than *Caloric* and there is probably no furnace with more widespread distribution.

People like to buy the well advertised, well known article. If you were selling razors you would likely handle Gillette or if cameras Eastman's because of their prestige and because when people think of razors or cameras they think of Gillette and Eastman and sales volume is greater and sales resistance less.

Many thousands of people all over the world think of Calorics when they think of furnaces. Handle the line that is well known and reduce the sales resistance you meet.

**MONITOR - CALORIC DIVISION
MARSHALL FURNACE CO.
MARSHALL — MICHIGAN**

We can furnish repairs for all old models Monitors and Calorics

**THE
TARPENNING
—LA FOLLETTE Co.**

Industrial Sheet Metal Work
Tanks—Pans—Hoods—Stacks
Ventilating and Dust Collecting Systems
"Best Equipt Sheet Metal Shop in the State"

1030 Canal St.—Riley 6963

Directory Advertisement

(Continued from Page 62)

in the winter, preparing their men to handle more, bigger, and better jobs.

Probably the next and perhaps the most important point of all in connection with making the most out of sheet metal business is to never take a job except at a profit. If one is only breaking even, or if he is losing money, it is much pleasanter to go fishing. However, not very many of us take a job at a loss if we know it. The trouble is that too often we don't know just what the actual cost is going to be; we forget something, or we make a mistake in our estimates.

The sheet metal contract costs consist primarily of:

Labor,
Material,
Overhead,
Profit.

It doesn't do to forget any of these—especially the profit. In order to keep track of just what the costs are on any job and thus give you a basis for estimating similar jobs later, it is a good idea to run a cost accounting system and rigidly adhere to it. Such systems are very simple, they take little work, and yield a tremendous return in dividends.

Often the owner of a small business wonders why a big business makes more money than he does when they have so much more overhead—and they have so many clerks adding up figures, etc. However, the big businesses have found that by studying their costs they can cut out the unprofitable work, revise their

prices, and make money on everything they do. No man has too small a business to follow these same principles.

In order to make it easy to keep such a system, again the Ingot Iron Shops have prepared a sixteen-page booklet outlining how the system is kept, and has printed up forms which are supplied free to Ingot Iron Shop members. With these forms a few minutes a day makes it possible to know exactly where you stand on every job, whether you have made money or lost money,

service because he is a valuable customer.

If you are buying from a dozen houses and a big contract comes along, no one of those houses feel that you are important enough to extend special credit to you. On the other hand, if your purchases have been concentrated with a very few firms, you are almost a part of that firm. They know you well. You have discounted your bills for years. The result is that you can secure special favors for the particular job, that will help you to bigger and better business.


In choosing these sources of supply, the successful contractor looks first for a house with quality merchandise. He wants to deal with people who have the things he wants—the well known articles.

The firm on which he concentrates his purchases should, of course, have good delivery facilities and a well trained sales and shipping force.

Build Reputation for Fair Dealing

And above all such a firm should have a reputation for fair dealing, because life is too short to be bothered with little, petty squabbles. All of us like to do business in confidence and as between friends. Then, the successful contractor goes out for business while his men finish the jobs on hand. If he is only a good workman, the chances are that he will make as much or more money working for somebody else as if he was working for himself. But if he is more than a good workman—if he is a leader of men—if

**DR exel 2773
Tin Shop on Wheels**



**SAVES MONEY ON
YOUR WORK
GUTTERS, SPOUTS
and
SHEET METAL WORK
JEWEL AND WISE
FURNACES
CAST IRON SMOKE PIPE
Yes — We Have A Vacuum
Furnace Cleaner**

HOMER SELCH
Sheet Metal and Warm Air
Heating
844 Va. Ave. DR exel 2773

A Direct Tieup Between Directory Advertising and the Shop

and to keep records which will enable you to bid intelligently in the future.

Contractor Must Also Be a Good Buyer

Besides handling men and bidding intelligently, the successful contractor is a good buyer. A good buyer is one who gets what he wants when he wants it, at a fair price. He usually concentrates on a few sources of supply. There are a number of advantages to this. One has to see fewer salesmen, he keeps his credit better, and he gets better

**Special
Sheet Metal Work**

WELDED STEEL PRODUCTS
Ventilating Systems
Machinery Guards
Heavy Gauge Factory Work

BRAD SNODGRASS
1041 S. State Ave.
DR exel 3644

Another Form of Directory Advertising



Interior of Sheet Metal Shop of John Balkema, La Fayette, Indiana, Where Famous Sheet Metal Dinner Was Held Recently. John Himself Is Seen Sitting Near the Small Boy

he is a good buyer—if he is prominent in his community—and if he is a salesman, then he is prepared to reap the real rewards of business. So after he gets his men started on the job he puts on his coat and hat and goes out to get more jobs to be done next day, next week, or next month.

How to Take Advantage of Every Advertising Opportunity

In connection with this the successful contractor takes advantage of every advertising opportunity. He ties up his shop with manufacturers' national advertising campaigns.

He will probably distribute blotters in the banks, at the post office, or even from house to house, so that people know he is in business, and know the high quality of the goods he handles, what he does, and thereby he makes his name so familiar that when people think of good sheet metal they think of him. In the same way, he lets passers by know who is doing the job. He never forgets to put up his job sign. Then when he sends out his bills he will slip in a little circular so that the man who gets the bill will know

more about sheet metal—more about the fact that he stands for quality work with quality iron.

Most sheet metal contractors have windows—windows worth from \$5.00 to \$25.00 per month in advertising through them if they will only take advantage of them. The successful sheet metal contractor uses this asset—keeps his windows clean and attractively dressed, and further drives home the idea of his shop as a sheet metal headquarters.

In short, the successful outstanding contractor is one who knows more than his fellows. He is the one who is not content with the average; not content to merely do as well as somebody else; but he is the man who looks ahead, sets his own goal and then works for it.

And, gentlemen, that word goal is the key of growth that unlocks the door of real success. Each new age in the nation's history simply brings new phases of the same struggle. Conditions change but the problem remains the same. Our ancestors moved out to this section of the country in long and dreary overland trips. They came because they had established a goal, a vision

of better things ahead. The sheet metal business today needs this same pioneering, this same vision. It needs men whose vision will see beyond today and tomorrow and the next day until it comes upon richer roads and greater achievement. And so in closing let me say that the successful contractor is a man who looks ahead, who builds for the future, he is the man who has the ability and the courage to meet conditions as they arrive and make it yield their treasure.

G. G. Ray, Charlotte, N. C., Sheet Metal Contractor, Dies

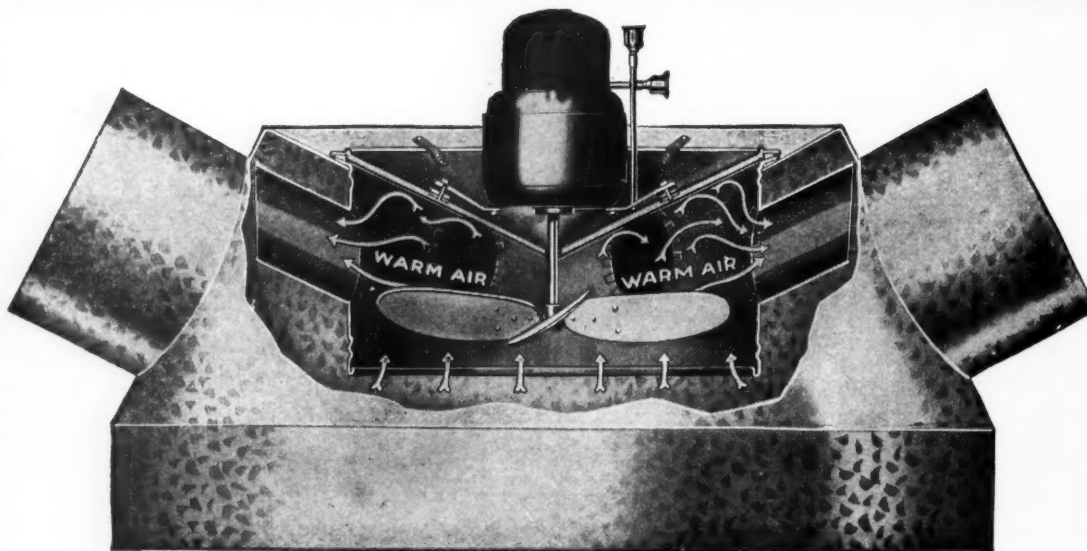
G. G. Ray, founder of G. G. Ray & Company, sheet metal and heating contractors of Charlotte, North Carolina, died in his home in that city recently.

Mr. Ray had been ailing for well onto two years. He has been inactive so far as business was concerned, but has been able until recently to go riding.

He enjoyed an enviable reputation in the industry and socially as well, being one of the most highly respected and beloved members of the sheet metal contracting business.

ROBINSON

Heat Distributor



THE simplest, most efficient, most economical and easiest installed furnace fan for forcing and *distributing* heat produced by warm air heating systems.

Thousands of homes, churches and schools are being heated more satisfactorily with the aid of the ROBINSON Heat Distributor.

Dealers everywhere are not only making extra profits with it but are actually creating more interest and sales in warm air heating plants because of its superior performance.

You should know all about this money making fan *now*—just write to one of the firms listed below for information as to construction, operation and prices. Right now is the time when your customers are interested—You can install a ROBINSON Heat Distributor quickly, without much labor and with a good profit.

The A. H. ROBINSON COMPANY - MASSILLON, OHIO

*These Jobbers
will serve you*

BAKER-PAYNE-VOYE CO., Boston, Mass.
THE BECKWITH CO., Dowagiac, Mich.
CARR SUPPLY CO., Chicago, Ill.
DAYTON-HESSLER CO., Syracuse, N. Y.
DEMMLER BROS. CO., Pittsburgh, Pa.
FARRIS FURNACE CO., Springfield, Ill.
C. L. FEATHERSTONE FURNACE CO., Spokane, Wash.
FOLLANSBEE BROTHERS CO., Pittsburgh, Rochester, Cincinnati, Memphis, Detroit, Indianapolis, Milwaukee, Louisville.
FLORAL CITY HEATER CO., Monroe, Michigan
FOX FURNACE CO., Elyria, Ohio
HEATING AND SUPPLY CO., Pittsburgh, Pa.

HENRY FURNACE & FOUNDRY CO., Cleveland, O.; Indianapolis, Ind.; Pittsburgh, Pa.
M. K. HOKE, Manheim, Pa.
HOMER FURNACE CO., Coldwater, Mich.
IDEAL FURNACE CO., Detroit, Mich.
W. E. LAMNECK CO., Columbus, O.
LENNOX FURNACE CO., Inc., Syracuse, N. Y.
LENNOX FURNACE CO., Canada, Ltd., Toronto, Ontario, and Winnipeg, Manitoba.
THE MAJESTIC COMPANY, Huntington, Ind.
MARSHALLTOWN HEATER CO., Marshalltown, Iowa
MAY-FIEBEGGER CO., Newark, O.; Akron, O.
MONCRIEF FURNACE CO., Atlanta, Ga.

NEW IDEA FURNACES, LTD., Ingersoll, Ont., Can.
J. M. & L. A. OSBORN CO., Cleveland, O.; Buffalo, N. Y.
PEASE FOUNDRY CO., Ltd., Toronto, Ontario, Canada
PENINSULAR STOVE CO., Detroit, Mich.
PHOENIX SUPPLY CO., Birmingham, Ala.
PORTLAND STOVE FOUNDRY CO., Portland, Maine
RICHARDSON & BOYNTON CO., New York, Chicago, Boston, Philadelphia, Buffalo, Minneapolis, Newark, N. J.
THE SCHILL BROS. CO., Crestline, O.
WESTERN STEEL PRODUCTS CO., Duluth, Minn.
WISE FURNACE CO., Akron, Ohio

Write for full details and prices today

Formula for Cleaning and Re-Tinning Copper Pickle Kettle

Most Important of All Is to Have Surfaces to Be Retinned Thoroughly Clean

L. MAX BAUGH, representative of the Meyer Furnace Company, writing from Galva, Illinois, asks for information on cleaning copper kettles, as follows:

"One of my customers has eight large copper steam kettles which are used in a pickle factory where vinegar and mustard is used to re-tin on the inside. Can you give me a formula for cleaning, preparing and tinning these kettles?"

In reply to Mr. Baugh's question, the Copper and Brass Research Association gives the following formula:

(1) Scrape the copper kettle with a scraper or use a wire brush, so as to get off all dirt. Then pour on some muriatic acid in order to rid the material of any remaining dirt. This acid should be swabbed all over the surface. After this cleaning, the kettle is ready for tinning by using cut acid and tin.

(2) Heat the utensil over a clean charcoal or coke fire and rotate until thoroughly heated. Then sprinkle a small quantity of sal ammoniac over the inside and wipe it out with a swab. Be sure that the kettle is thoroughly cleaned in crevices around the handle, rivets, etc. Cool down to about 150 degrees F., add enough muriatic acid to cover the bottom, swirl the acid around on the inside and clean out thoroughly by swabbing. Wash with running water. If an exceptionally smooth surface is required, the article should be scoured a second time with very fine sand and clean water. The main thing in re-tinning is to have the utensil absolutely clean.

(3) Make a solution, add 1 quart of sulphuric acid to 10 quarts of water. Use this on the inside of the utensil, swabbing around. Pour out, let it dry, and then wash and swab thoroughly with muriatic acid. The utensil is now ready for tinning. It is essential before tinning that all

repairs have been made, dents removed, etc., and all grease removed. To avoid molten tin adhering to the outside surfaces, coat the article with a mixture of whiting, salt and water, which should be made to the consistency of thick paint. The tin should not be overheated, a temperature slightly greater than 450 degrees being sufficient. In order to prevent the tin from oxidizing, use zinc chloride and sal ammoniac. The amount of tin used equals about 1 pound for every 12 square feet of surface, or about 1½ ounces per square foot re-tinned.

Caddle Succeeds Gowen as Copper & Brass Secretary

The Board of Directors of the Copper & Brass Research Association at its January meeting elected Bertram Barrett Caddle as Secretary,



Bertram Barret Caddle

tary, to succeed John Fellows Gowen, resigned.

Mr. Caddle has been connected with the Association as assistant to Mr. Willis, the manager, for seven years. He was born in Wheeling,

W. Va., in 1887 and before coming to the Association had an extensive newspaper experience, being connected with the editorial departments of the Wheeling Intelligencer, the Wheeling News, and the Wheeling Register; the Cleveland Plain Dealer, the El Paso Times, the El Paso Herald, the Santa Fe New Mexican, the Albuquerque Herald and the New York Herald.

Mr. Gowen, who served two years as Secretary, resigned to take a position on the staff of Lehman Bros., bankers of No. 16 William Street.

Finds Cold Air Short in A. L. Mayers' Installation

Wesley J. Johnson, Wilkesburg, Pennsylvania, representative of the Ideal Furnace Company, finds a discrepancy in the A. L. Mayers warm air furnace installation which appeared in our December 22nd issue. He writes as follows:

TO AMERICAN ARTISAN:

"The writer has been more than ordinarily interested in the installation as referred to in the ARTISAN by Mr. A. L. Mayers, Pekin, Ill.

"By referring to the December 22 issue you will note installation as was made is of a No. 2550 Rudy furnace, with one 12-in., five 10-in. and four 9-in. warm air runs, or a total of 755 in. of warm air, as against one 16-in. and two 18-in. cold air returns, total capacity return air, 709 in. A little shortage somewhere.

"The writer does not feel that it is possible to show a 70-degree temperature at zero. Also would like to hear from Mr. Mayers, if he feels that a No. 2550 Rudy furnace is large enough to heat 755 in. piping capacity in severe weather.

"There is absolutely no question as to the quality of the furnace installed, but do think that a much better installation could have been made should he have returned 830 in. of cold air and a size larger furnace used. The writer is a very strong advocate of Standard Code installations."

**Mr. Jenkins of
Wahoo, Nebraska,
Still in Difficulties**

W. G. Jenkins, Wahoo, Nebraska, wrote in some time ago complaining about a warm air furnace that would not heat. Our good friend, Sam J. Sorensen, 1336 North Central Avenue, Chicago, took it upon himself to give Mr. Jenkins a hand.

Now Mr. Jenkins writes to Mr. Sorensen again, giving further information as follows:

"I have your reply of January 5th concerning correcting the furnace trouble I am having. Mr. Duerr of AMERICAN ARTISAN wrote

me for a flashlight picture of my furnace installation which I mailed to him the day before I received your letter.

"You must have read my plan and pipe layout wrong, as none of the pipes go up along an outside wall. The nearest approach to it is the warm air pipe that heats the west bedroom. This goes up the last (west) space between studs in the south wall of this west bedroom. There is a cold air pipe that goes down the outside walls on both the west and south bedrooms.

"The arrangement of pipes is such and the space is so limited that I cannot install a 22-inch pipe and

boot into the furnace, as you suggested. Yesterday morning it was about 4 degrees below zero and I noticed there was no heat coming up in the bathroom. I held a match in front of the warm air register in the bathroom and found that this warm air pipe was acting as a cold air pipe; the smoke from the match was sucked into the pipe. After I got the fire going it again started to send up warm air.

"Would I get any benefit if the two pipes (12-inch and 14-inch) to the downstairs were cut into the side of the bonnet and the two going upstairs to the north bedroom and bathroom were put into the top of the bonnet? Then in place of the cold air register in the wall in the west side of the dining room I would close up the one in the wall and put one in the floor directly in front of the one at present in the wall and enlarge the duct leading to the 22-inch vertical pipe. I do not like to install a fan; in fact, I can not afford it. Thanking you for your information, please advise me what I owe you for your trouble.

"If it would not be too much trouble, would you make me a pencil sketch of how you would install this furnace if there were a complete new job?"

**E. O. Wolff Also Has
Corrective for B. J.
Malerich Heating Trouble**

TO AMERICAN ARTISAN:

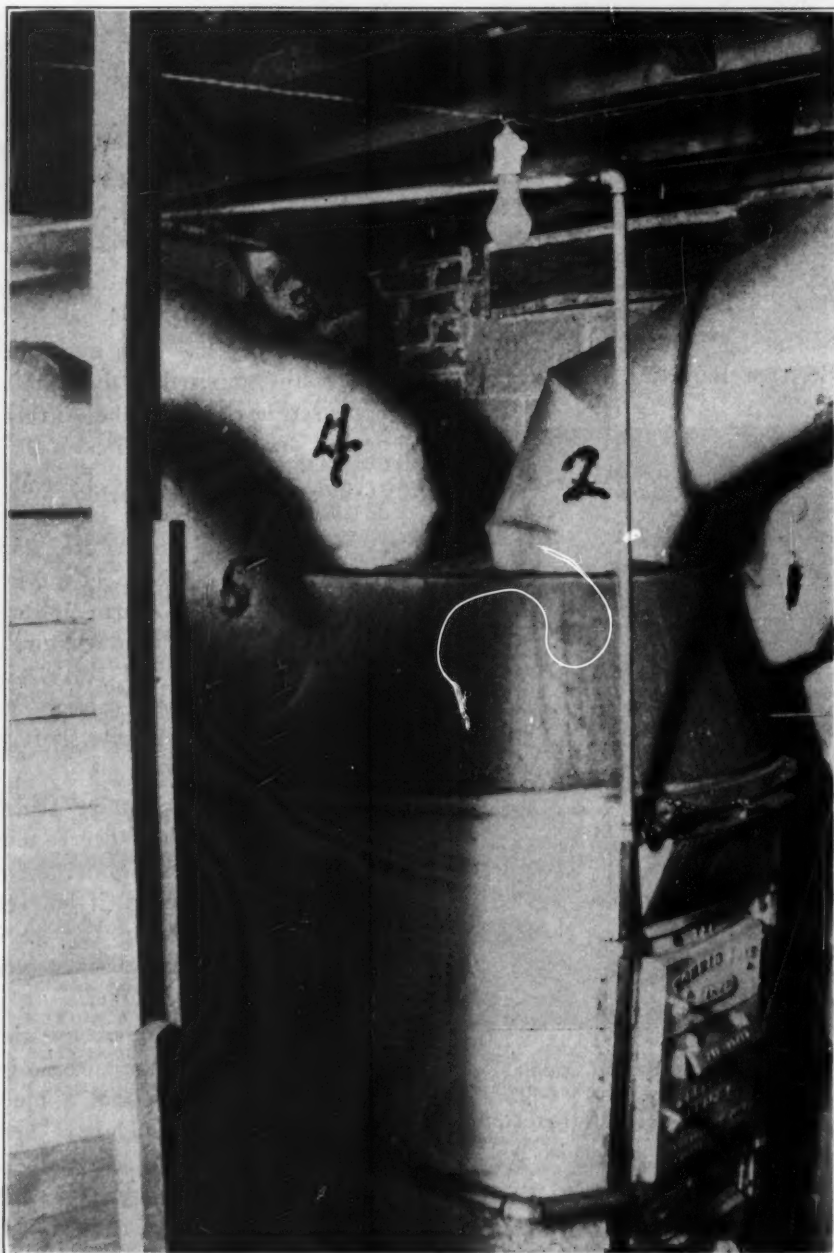
I note in the AMERICAN ARTISAN, Feb. 2, 1929, that B. J. Malerich, Arrowhead Sheet Metal Co., is having trouble to heat a bath room in a house, which is an exact duplicate of the house next door, and offer the following suggestions:

The house which is having the trouble is probably more exposed to the winds than the other.

The room may be air bound, because of excessive wind pressures.

The doors and windows may need weather strips.

It is possible that the floors (if this is a frame house) do not extend all the way to the outside sheathing, but end at the plaster wall. If so, it will be hard to heat. This



Showing Pipe Arrangement

can be overcome by closing spaces between studs in basement with pieces of iron, so the cold air can not circulate up and down between plaster and sheeting.

If the room is air bound, remove the door strip at bottom.

All this is worth trying, as I have remedied hundreds of jobs by doing these things, for which we make a charge, as they are not part of the heating man's job.

Yours very truly,

E. O. WOLFF,

E. O. Wolff Heating Company.

Noted Welding Engineer and Scientist Dies at Long Island City

Samuel Wylie Miller, consulting engineer of the Union Carbide & Carbon Research Laboratories, Inc., of Long Island City, New York, well known both in the United States and in Europe as a pioneer in oxy-acetylene welding and an authority on its application, died on February 3rd at his home in Hollis, Long Island, N. Y., at the age of sixty-two.

Mr. Miller was a native of New York and received his degree in Mechanical Engineering from Stevens Institute in 1887. His first professional activities were as master mechanic for the Pennsylvania Railroad plants at Logansport, Indianapolis, Indiana, and Columbus, Ohio. Following this he was with the American Locomotive Company at Dunkirk, New York, and Providence, Rhode Island, after which he founded the Rochester Welding Works at Rochester, New York. During the World War he served on the Welding Committee of the Emergency Fleet Corporation. In 1921 he joined the newly formed Union Carbide & Carbon Research Laboratories, Inc.

In professional circles Mr. Miller was recognized as an able engineer. He was a director and past president of the American Welding Society, a director of the American Bureau of Welding, and chairman of the Oxy-Acetylene Committee of the International Acetylene Association. As a member of the Welding

Subcommittee of the Boiler Code Committee he was prominently identified with the American Society of Mechanical Engineers. He was an active member of the American Institute of Mining and Metallurgical Engineers, American Society for Steel Treating, British Iron and Steel Institute, Institute of Metals, and other scientific and engineering organizations.

Mr. Miller was instrumental in the development of welding by all processes scientifically well founded and was noted for his energetic insistence upon high quality and dependable workmanship. He was the donor of the Miller Medal, awarded annually by the American Welding Society for work of conspicuous merit in advancing the art and science of welding.

He is credited with having been among the first to visualize the possibilities of the oxy-acetylene process, and his important contributions to it were many. He wrote several books on the subject and was much sought after as a lecturer on welding at engineering meetings. The loss of Mr. Miller will be keenly felt by the entire engineering and welding profession.

"The New Steel Bench" at the Maplewood Machinery Company

While visiting the Maplewood Machinery Company, Chicago, one is especially impressed with the new type steel benches used for mounting the shop machines.

These benches are constructed entirely of steel and welded throughout, making them strong and durable, although being light in weight, so that they can readily be moved from place to place with ease.



The Steel Bench

The possibilities of this item of manufacture should be very great, as they will reduce the space that the various machines occupy in the shop to an efficient minimum and they can be arranged in orderly rows so that the workmen can work between them conveniently.

A bench of this type will pay large dividends, as it will tend to reduce a shop's overhead by utilizing every inch of shop space neatly and efficiently.

Sam Sorensen Has Corrective for Arrowhead Sheet Metal Co.

TO AMERICAN ARTISAN:

In answer to B. J. Malerich of the Arrowhead Sheet Metal Co.

I suggest that you take a 9 inch cold air return from the bath room to the furnace.

The nature of the difficulty shows that you have a strong cold air pressure in said room, because the air in a heat pipe that is completely hooked up to register never stands stationery, it either heats or is a cold air return.

If the above suggestion does not help, follow it up by raising the heat register opening 3 or 4 feet above floor line.

After you have followed out the first suggestion, let's hear from you in regard to how it acts before you try the second.

Yours truly,

SAM SORESENSEN,

1336 N. Central Ave.

Armco Finds Radio Useful in Despatching Trains

A unique application of radio equipment to locomotive operation is being tried out by the American Rolling Mills Company at Ashland, Kentucky. The equipment being used is similar to that used on main freight lines, but in this case one unit is installed in the yard dispatcher's office and the other on the locomotive, working in the yard around the plant.

Two-way communication is being provided, enabling the dispatcher to issue an order and receive a confirming reply.

**Mrs. Ed. Jewett,
San Antonio, Texas, to
Continue Husband's Business**

As evidence of the fact that women are more and more going into all lines of industry on their own, Mrs. Edward Jewett, 510-12 Market Street, San Antonio, Texas, has determined to continue the business of the Jewett Cornice & Roofing Company, which was left to her at the death of her husband, Ed. Jewett, some time ago.

Mr. Jewett established the Jewett Cornice & Roofing Company back in 1896 and had conducted a profitable business in San Antonio during 30 years. He was one of the old school of sheet metal men in every sense of the word, knowing his business from the ground up. He engaged in the business of manufacture and erection of galvanized iron and copper cornices, skylights, roofing and steel ceilings.

The good wishes of the entire sheet metal industry attend Mrs. Jewett in her venture.

**Bremer Now Heads
Chicago Sheet Metal
Employers**

Fred S. Bremer, sheet metal contractor at 2629 West Harrison Street, Chicago, is now the President of the Associated Sheet Metal Employers of Chicago. Mr. Bremer was Vice President of the organization at the time of the death of Harry J. Dettmers. The Secretary of that progressive organization is Hans Staar of Frank Staar & Sons, Inc., 1474 North Halsted Street, Chicago.

Speaking of progressiveness of organizations, it will be remembered that the Chicago Sheet Metal Employers' Association went down to the Cleveland convention of the National Association of Sheet Metal Contractors more than 40 strong last year. It is hoped that they will have even more in their party this year going to the convention at Baltimore. Mr. Fingles, General Chairman of the national convention, is working hard to make the convention a big success, and everyone should join in and help him put it over.



Weather Stripping

From Leslie M. Cobb, 403 W. Fifth Street, Waterloo, Iowa.

Can you tell me who makes metal weather stripping?

Ans. — Allmetal Weatherstrip Company, 229 West Illinois Street; Chamberlin Metal Weatherstrip Company, 704 South Dearborn Street, and Federal Metal Weatherstrip Company, 4538 Fullerton Avenue; all of Chicago.

"Maytag" Washing Machine

From Riverside Hardware Company, 2231 Riverside Boulevard, Sioux City, Iowa.

We should like to know who makes the "Maytag" washing machine.

Ans.—The Maytag Company, Newton, Iowa.

Monitor and Caloric Furnace Patterns

From Martin and Keiln, Welcome, Minnesota.

Will you kindly tell us who has taken over the Monitor and Caloric furnace patterns?

Ans.—Marshall Furnace Company, Marshall, Michigan.

Revolving Chimney Tops

From Christian Roder, 1916 Byron Street, Chicago.

Who in Chicago carries the revolving chimney tops made by the Standard Ventilator Company?

Ans.—Friedley-Voshardt Company, 733 South Halsted Street.

Strip Aluminum

From Riverside Hardware Company, 2231 Riverside Boulevard, Sioux City, Iowa.

Please tell us where we can obtain $\frac{3}{4}$ inch strip aluminum about the thickness of 28 gauge, in coil form.

Ans.—Aluminum Company of America, 360 North Michigan Avenue, Chicago.

Cast Iron Tea Kettles

From Robert J. Steger Sheet Metal Works, Avilla, Indiana.

Can you tell us who makes 8-quart cast iron tea kettles.

Ans.—Wagner Manufacturing Company, Sidney, Ohio, and Griswold Manufacturing Company, Erie, Pennsylvania.

Setter Can Bottoms

From Mr. L. V. Strayer, Cresco, Iowa.

Where can we buy $8\frac{1}{2}$ inch 1XX Setter Can Bottoms?

Ans.—The Independent Can Company, 1328 West Monroe Street, Chicago.

Klinker Tongs

From a Subscriber.

Will you please tell us who makes klinker tongs?

Ans.—The Hart and Cooley Manufacturing Company, Holland, Michigan; Wilkowski Manufacturing Company, Watertown, Wisconsin.

Soft Copper Tubing

From Wardelman Sheet Metal Works, 220 West Court Street, Paris, Illinois.

Where can we buy 2 inch soft copper tubing in 22 inch circles or half circles, the tubing equal in thickness to 20 gauge steel and not flexible?

Ans.—American Brass Company, 111 West Washington Street, Chicago.

Ventilators on Page 21 of December 1, 1928, Issue

From Thoren and Company, Stromsburg, Nebraska.

Will you please tell us where we can get information about the ventilators pictured in figures 4 and 5 on page 21 of your December 1, 1928, issue?

Ans.—These ventilators are made by the Burt Manufacturing Company, Akron, Ohio, and Allen Air-Turbine Ventilator Company, Detroit, Michigan.

Blower Fan

From C. L. Epps, Van Wert, Ohio.

Do you know who makes a blower fan to be put in a smoke pipe or chimney to increase the draft?

Ans.—Heating Systems and Supply Company, 205 West Lake Street, Chicago, Illinois.

Western King Furnace

From Midland Sheet Metal Works, 735 West 93rd Street, Chicago.

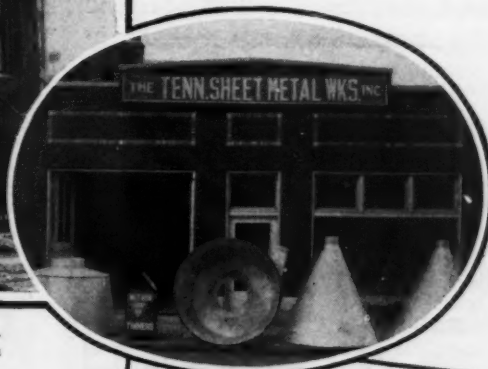
Can you tell us who makes the Western King furnace, No. 123 Independent? We are in the market for second shaker grate for it.

Ans.—This is the name and number of a furnace sold by Blish, Mize and Silliman Hardware Company, Atchison, Kansas.



Here, on this residence, is a 17-year-old ARMCO Ingot Iron gutter job that Contractor Thomas Heye of St. Charles, Missouri, has found a forceful lever in converting prospects into satisfied customers.

John Moorfield, Ingot Iron Shop contractor of Memphis, Tennessee, says: "We use a great deal of ARMCO Ingot Iron when the material is to be exposed to the weather." A practice that pays, as thousands of contractors will testify.



You get more than just sheet metal ...this way

WHEN you use and recommend ARMCO Ingot Iron, you get soft, easy-working sheets . . . Metal, too, that lasts and satisfies customers.

Yet this is not all. Back of every shop that endorses ARMCO Ingot Iron is the powerful support of ARMCO and the ARMCO Distributors' Association of America. These aggressive organizations are constantly on the alert to create more and profitable business for enterprising contractors.

Full page advertisements in The Saturday Evening Post and Good Housekeeping magazines are telling millions of people the story of ARMCO Ingot Iron economy; are directing them to Ingot Iron Shops, where they get the most value for their sheet metal dollars.

Ingot Iron Shops are well equipped to do a profitable selling job. They get innumerable helps—among which are blotters, billheads, folders, sales letters, job cards, and a free subscription to Ingot Iron Shop News, an *idea* publication issued monthly.

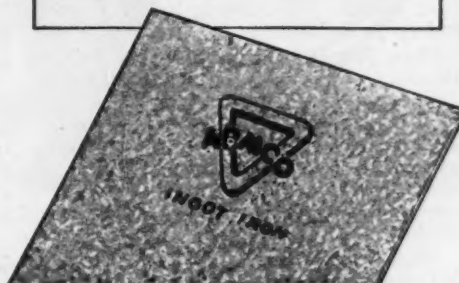
If you are interested in using ARMCO Ingot Iron, or in having an Ingot Iron Shop, just ask your salesman to explain. Or, write us direct.



This arresting and persuasive advertisement appears in The Saturday Evening Post of February 16. It is one of thirteen messages that will run in that publication this year. Is your shop benefiting by its tremendous influence on sheet metal buying habits in your community?

ARMCO

INGOT IRON
RESISTS RUST



ARMCO DISTRIBUTORS' ASSN. OF AMERICA

Executive Offices: Middletown, Ohio

Say you saw it in AMERICAN ARTISAN—Thank you!

Warm Air Heating and Sheet Metal Products and Men Exhibiting Them at Wisconsin Hardware Show, Milwaukee

THE following list is that of the exhibitors of sheet metal products, warm air furnaces, registers, pipe and fittings, and supplies and the names of the men present representing the firm having exhibits:

A-C Manufacturing Company, Pontiac, Illinois. A-C Automatic "Heat Boosters."—D. R. Capes and Edward F. Daugherty.

American Foundry and Furnace Company, Bloomington, Illinois. American heat hustlers, American and Lincoln furnaces.—S. F. Wandschneider, Paul Schriber, R. P. Whitmer and A. P. Wandschneider.

Barnes Metal Products Company, Chicago, Illinois. Conductor pipe, eaves trough, elbows, mitres, etc., made from galvanized steel, Keystone metal, lead sealed, Armco, Toncan, zinc and copper.—C. G. Siebert and W. J. Ahern.

The Beckwith Company, Dowagiac, Michigan. Furnaces, circulating heaters, stoves and ranges.—J. R. Gardner, R. S. McManners, F. S. Cole.

Brillion Furnace Company, Brillion, Wisconsin. Furnaces.—M. P. Ohlsen, George E. Murphy, Charles F. Mertle, Otto Dressler.

Carr Supply Company, Chicago, Illinois. Auer registers in olive tints, One-piece register with two joints.—DeWitt Van Evera.

The Excelsior Steel Furnace Company, Chicago. Steel and cast furnaces, furnace pipe and fittings, stove pipe and elbows.—A. B. Glessner, J. P. Brooks, C. E. Glessner and W. R. Lawson.

Follansbee Brothers Company, Pittsburgh, Pennsylvania. Follansbee warm air furnaces, Robinson heat distributors, Sheer heat controls, and Follansbee forge best roofing.—C. E. Baumann, J. G. Harding, H. H. Wherry, J. J. Luitink, and W. H. Duce.

Green Foundry and Furnace Works, Des Moines, Iowa. Green colonial furnaces.—Martin Johnrud and Shirley Percival.

Hall-Neal Furnace Company, Indianapolis, Indiana. Warm air furnaces.—H. P. Barnes.

International Heater Company, Utica, New York and Chicago, Illinois. Economy furnaces and Economy boilers.—Reid Mackin, J. M. Beech, E. M. Tyler and A. J. Beilfuss.

Chas. Johnson Company, Inc., Peoria, Illinois. Champion furnace fittings.—Jack Barclay and Bill Laffin.

The Lennox Furnace Company, Marshalltown, Iowa. Steel warm air furnaces and steel coal windows.—Roy T. Wasson, vice-president and sales manager, and Fred A. Wood and Harry A. Probst.

Metal Service Company, Green Bay, Wisconsin. Heating supplies and prepared roofing.—J. C. Berger, C. A. Boyden and W. B. Stowell.

Morley-Murphy Company, Green Bay, Wisconsin. Globe ranges, Globe "Glow-

Boy" and Globe "Ray-Boy."—Ed. Horig and C. Kaye of Murphy-Morley Company, and William A. Cooper of the Globe Stove and Range Company, Kokomo, Indiana, makers of the above products.

L. J. Mueller Furnace Company, Milwaukee, Wisconsin. Ten different types of heaters were on display. Gas Era furnaces and boilers, coal fired furnaces and boilers, gas and coal fired cabinet heaters, combination coal and wood furnaces, furnace pipe and fittings, New Perfection air moistener.—H. P. Mueller, Ellsworth Dunning, George Levzow, Walter Melius, William Mills, Dave Carlson, J. Roberts, Henry Carlson, V. Roberts, Henry Hotton, Victor Brehm, E. A. Jones and E. A. Liessman.

Premier Warm Air Heater Company, Dowagiac, Michigan. Premier de Luxe furnaces.—E. C. "Buck" Taylor and Joe Worth.

Rudy Furnace Company, Dowagiac, Michigan. Rudy furnaces, Rudy "Fan" job.—Pat Gibbons, Wisconsin representative, and Tom Torr, heating engineer.

R. J. Schwab and Sons Company, Milwaukee, Wisconsin. Gilt Edge furnaces, Rock Island "No-Streak" registers, "Champion" furnace pipe and fittings.—H. E. Schwab, A. G. Pomrenning, Harry A. Schlegel, Larry Mills and Joseph Burgess.

Success Heater Manufacturing Company, Des Moines, Iowa. Success service steel furnace.—W. Gunton and H. R. Griswold.

The Thatcher Company, Newark, New Jersey. Furnaces, boilers, ranges, radiators and gas ranges.—R. C. Cook, vice-president; Howard Perkinson, Chicago manager; Theodore Emery and W. R. Williams.

Tuttle-Bailey Manufacturing Company, New York City and Chicago. Registers.—D. R. Farquhar, Trow. Warner and Tom Maddox.

Waterman-Waterbury Company, Minneapolis, Minnesota. Waterbury seamless furnaces, home heaters and sanitary closets.—A. G. Clemens, B. O. Schwarz, H. G. Cross and F. G. Sedgwick.

Wheeling Corrugating Company, Chicago, Illinois. Pails, tubs, ash and garbage cans, ovens, rubbish burners, oil and gasoline cans, sprinkling cans, Channel-drain roofing of Cop-R-Loy steel.—J. W. Black, Ben Huisman, C. C. Collipp and A. J. Madson.

Whitney Metal Tool Company, Rockford, Illinois. Ball bearing and lever punches.—W. A. Graves.

Bergstrom Manufacturing Company, Neenah, Wisconsin. Furnaces, furnace fittings, United States registers.—James W. Bergstrom, Elmer Radener, C. L. Youngs, C. S. Chapman, J. J. Defrut; C. J. Pearson of the United States Register Company.

Marshall Furnace Company, Marshall, Michigan. Caloric pipe and pipeless furnaces.—Forest Bolds and I. C. Livingston.

Peninsular Stove Company, Detroit, Michigan. Gas ranges, circulators and furnaces.—S. M. Schaeffe.

United States Register Company, Battle Creek, Michigan. Registers.—C. J. Pearson.

The Fox Furnace Company, Elyria, Ohio. Sunbeam cabinet heaters and Sunbeam furnaces. Also showed their model furnace.—E. A. Grange and E. M. Weideman.

Milwaukee Corrugating Company, Milwaukee, Wisconsin. Metal roofing and ceilings, sheet metal building products, furnace pipe and fittings, metal laths and corner beads, ventilators.—A. C. Scheder, Thos. Pykett, G. H. Schneider, A. T. Swan, A. H. Schmelzer and J. H. Christman, Vice-President and General Sales Manager.

Announce New Features for 1929 Torrid Zone Steel Furnaces

The Lennox Furnace Company of Marshalltown, Iowa, and Syracuse, New York, have announced new features in the 1929 Torrid Zone line of Steel Furnaces.

More primary radiating surface, deeper firepots and larger radiators are listed among the new improvements. Through an error in proof-reading, the heading of the advertisement of the Lennox Furnace Company in the February 2nd issue of AMERICAN ARTISAN in which the new furnaces were featured, read *large* radiators instead of *larger* radiators.



Ohio Sheet Metal Contractors' Association, Columbus, Ohio, February 12, 13, 14, 1929. Arthur P. Lamneck, W. E. Lamneck Company, Columbus, Ohio, Chairman convention committee.

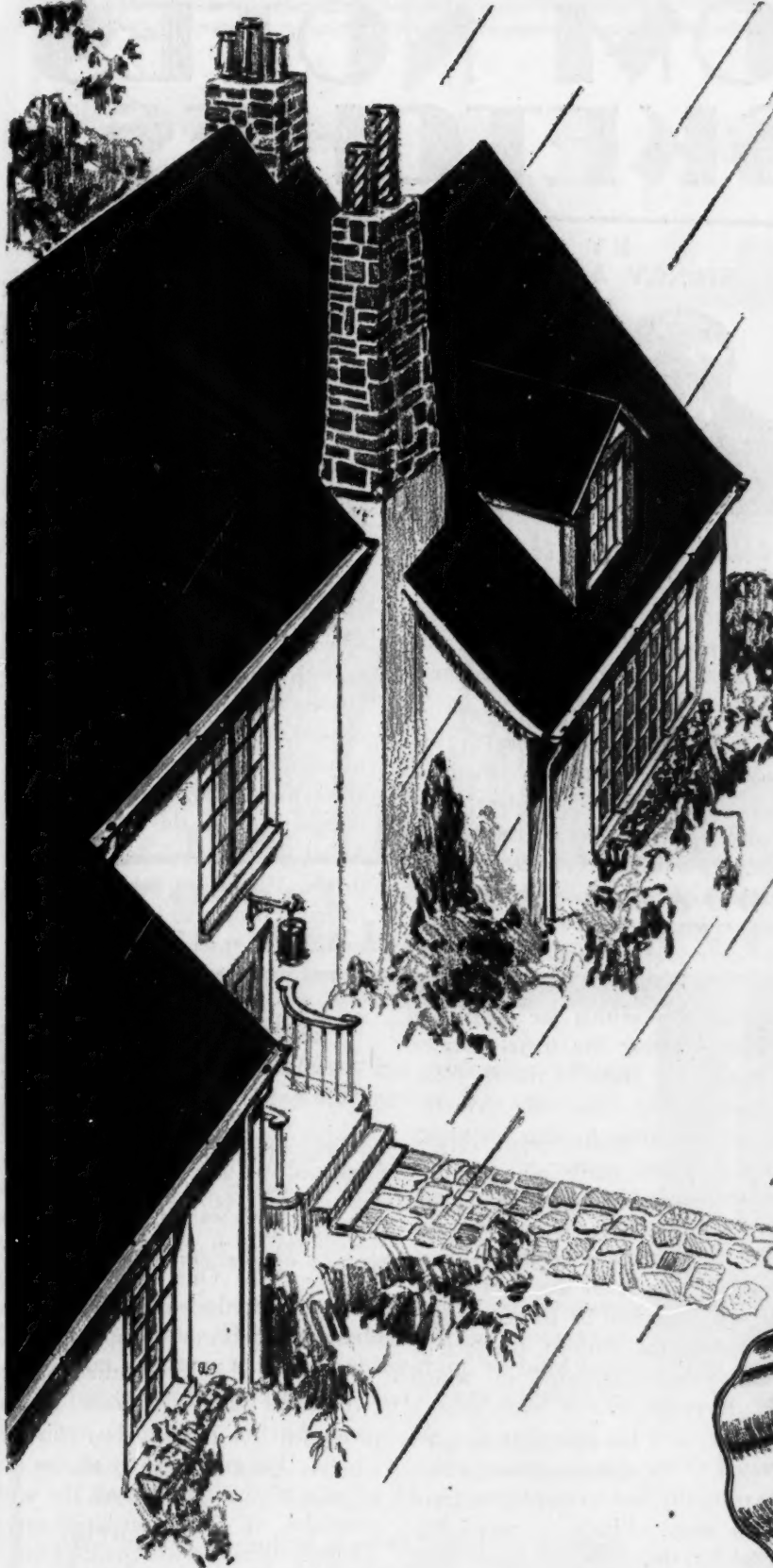
Illinois Retail Hardware Association Convention and Exhibition, Hotel Sherman, Chicago, Ill., Feb. 12, 13 and 14, 1929. P. M. Mulliken, managing director, Elgin, Ill.

Minnesota Retail Hardware Association Convention, Feb. 19, 20, 21, 22, 1929, at Minneapolis Municipal Auditorium. Chas. H. Casey, manager-treasurer, Nicollet at Twenty-fourth Street, Minneapolis.

Michigan Sheet Metal & Roofing Contractors' Association, Flint, Michigan, March 5, 6, 7, 1929. Frank Ederle, 1121 Franklin Street, S. E., Grand Rapids, Michigan, Secretary.

Pennsylvania Sheet Metal Contractors' Association, Hotel Brunswick, Lancaster, Pennsylvania, April 2, 3 and 4, 1929. Secretary, W. F. Angermeyer, 7253 Frankstown Avenue, Pittsburgh, Pa.

National Warm Air Heating Association annual meeting, Claypool Hotel, Indianapolis, April 9, 10, 11, 1929. Secretary Allen W. Williams, 174 East Long Avenue, Columbus, Ohio.



"SEND a big man to do a big Job"

The big job of roof-drainage falls to the lot of the Elbows. It's in the Elbows that bunched leaves gather sewer gas and moisture. It's in the Elbows that the water hits and scours the hardest.

Who's the big man for this job? The Lupton Elbow of course! Lupton Elbows stand up best because they're made of heavier metal, are more heavily galvanized, and are correctly shaped for fast discharge.

Lupton Elbows are made right—made to last—made to take the wear. And every one is uniform.

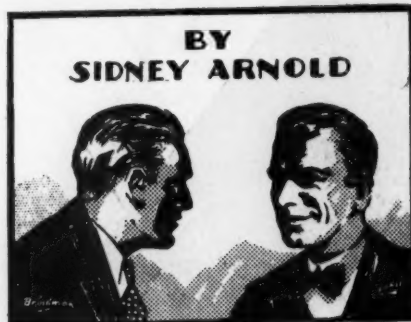
DAVID LUPTON'S SONS COMPANY
Allegheny Ave. and Tulip St., Philadelphia

Lupton Elbows

Mention AMERICAN ARTISAN in your reply—Thank you!

RANDOM NOTES AND SKETCHES

In Milwaukee this week I had the pleasure of visiting with my old friend, O. Geussenhainer, Sheboygan, Wisconsin. Mr. Geussenhainer, you know, is one of the organizers of the Master Sheet Metal Contractors' Association of Wisconsin. He is one of the three life members of the Board and a most delightful character to know. Although well advanced in years, Mr. Geussenhainer takes an unusually keen interest in all that is going on. His advice and counsel as a director of the Wisconsin association has aided the officers of that organization during its fifteen years of existence to steer successfully around many pitfalls which it might otherwise have been unable to avoid. In his own city, Sheboygan, Wisconsin, he is held in the highest of esteem by fellow business men and townspeople, and there are few of the members of the Wisconsin Sheet Metal Contractors' Association who do not display the keenest of interest in the convention proceedings whenever Mr. Geussenhainer is called upon for a report or any other information he is asked to give. He also had a keen sense of humor as well, as the following incident will reveal: During one of the sessions of the recent convention, he was seated between two of his friends listening quietly to the discussion. The problem under discussion was ventilation. After a time he signified his desire to the chairman to have the floor. Rising slowly through a haze of smoke so thick that you could easily have cut it with a knife, he said, "Mr. chairman, since the subject of ventilation is under discussion at the present moment, I would like to have a committee appointed to go down and find out what is wrong with the ventilation in this room." Which



produced loud cheers and laughter. I surely enjoyed seeing Mr. Geussenhainer again and hope that it will be my privilege to find him present at a great many more such meetings.

* * *

There were also present at the meeting other notables. Paul L. Biersach, National President, who is also a life member of the Board, was very much in evidence. An incident occurred at one of the meetings which must have afforded Mr. Biersach a great deal of satisfaction. A question was asked from the floor concerning the possibility of resuscitating the metal cornice business. R. Jeske of the R. Jeske Company, 112 Reservoir Avenue, Milwaukee, arose to state his views on the subject matter in question and in doing so he happened to mention a few facts concerning his entrance into the sheet metal business. He spoke of the days in his early youth when he passed to and fro before the shop of Biersach & Niedermeyer Company, of which Mr. Biersach was at that time a member, and his attention was attracted to the metal cornices which the company had on display in front of the shop. Finally he was influenced by the sight of these well formed and ornate cornices to go

into the shop and ask for a job. Now Mr. Jeske runs his own shop and is more than ordinarily successful at it, and, therefore, it must be a source of much satisfaction to Mr. Biersach to know that he was in some measure the means of so training a young man in the sheet metal business that that young man was able later to go out and enter the business on his own score and make a good success of that business. Mr. Jeske is of somewhat an austere mean. He speaks very little, but when he does he reveals in what he says that he has been and is a close student of the problems that are constantly confronting the sheet metal industry. He is a thorough sheet metal man at heart, and his membership in the Master Sheet Metal Contractors' Association and in the Milwaukee local is a source of much benefit to both of those organizations, as he brings to them a sound judgment, a thorough understanding of all phases of the industry, and an aggressive persistence in pushing things to a successful conclusion.

* * *

Two furnace salesmen (I know their names but won't disclose them) were walking along the railroad tracks and found a bottle of white mule. One took a drink and passed it to the other. And so forth until the bottle was empty.

After awhile one puffed out his chest and said, "You know, Bill, tomorrow I'm going to buy this railroad. I'm going to buy all the railroads in the country, all the automobiles, all the steamships—everything. What do you think of that?"

Bill looked at his companion, disparagingly and replied, "Impossible, can't do it."

"Why not?"

"I won't sell!"



TONCAN



Protect your Customers *with* rust-resisting TONCAN IRON

RUST PROTECTION—fire protection—these are the things your customers want.

And these are the things you give them when you use Toncan Copper Mo-lyb-den-um Iron. It resists rust and the stealthy attacks of corrosion, longer than any other ferrous metal. It's as fine a protection against fire as you can use.

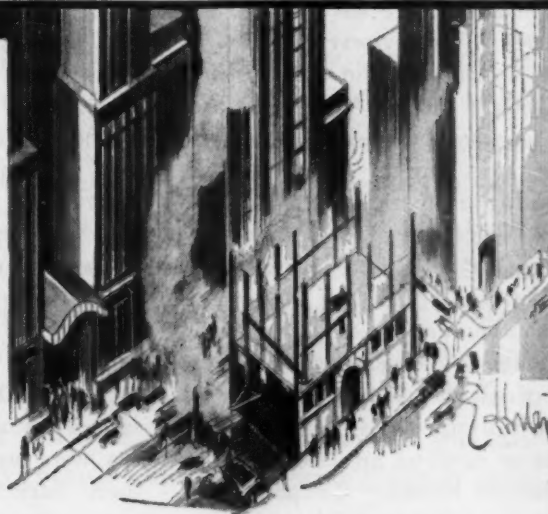
Leading sheet metal contractors use Toncan consistently. They have learned from experience that this super-iron enables them to hold customers and to sell their services more effectively.

For roofing—piping—stoves—ventilators—sheeting of all kinds—and a hundred varied uses, Toncan will build business for you.

We have a complete plan to help you increase your business and add to your profits. Write for it.

CENTRAL ALLOY STEEL CORPORATION
Massillon, Ohio

WORLD'S LARGEST AND MOST HIGHLY
SPECIALIZED ALLOY STEEL PRODUCERS



REG. U.S. PAT. OFF.
TONCAN
COPPER
Mo-lyb-den-um
IRON

Second Quarter Levels in Iron and Steel Approach Determination

Copper Meets Two Quick Rises with Hearing—Zinc Recovers from Drop

WITH iron and steel tonnage for the first half year apparently assured, prices are moving rapidly into the usual February test period. Expanding specifications and deferred deliveries are appraised by steel producers generally as fortifying the price structure, if not warranting advances.

Books on steel bars, plates, shapes and strip for the second quarter should be opened within the month. Consideration of prices thus far indicates a rise of \$2 per ton. Last week's advance of \$2 in cold strip points the way for hot strip.

Delivery continues to take precedence over price for most consumers of bars, plates, sheets and strip, who include such proverbially-close buyers as freight car builders and automotive manufacturers.

As the third steel works stack in as many weeks is lighted at Chicago, steel making there has risen to 92 per cent. Twenty-seven of the 36 steel works stacks in that district are active; bar and plate mills are at capacity. Pittsburgh, where sheet, strip and tin plate mills are operating fully, has bettered last week's ingot rate of 85 per cent.

Pig Iron

Contract shipments of pig iron at Pittsburgh are holding up well. Although new orders generally consist of one or two carloads there is a fairly steady run of such business.

Large inquiries are lacking. The Richmond Radiator Company's inquiry for 5,000 tons for its Uniontown, Pennsylvania, plant still is pending. Another radiator company with plants in Johnstown and New Castle, Pennsylvania, is in the market for an unstated tonnage for second quarter.

Basic iron is quiet, although small tonnages placed a short time ago substantiate the quotation of \$17.50, valley.

Sales of foundry iron generally command \$17.50, valley, for No. 2 plain and \$18 for No. 2X. Some reports are heard of shading of \$17.50, but are not generally credited. Orders for bessemer iron are small, and \$118.25, valley, is the representative price. Malleable holds at \$18, valley.

With more inquiries appearing for second quarter at Chicago, it is evident a number of buyers feel assured as to the stability of the pig iron market.

The strength in the scrap market has had little direct influence in the pig iron market except to increase demand for higher silicon grades.

The Lakey Foundry & Machine Company, Muskegon, Michigan, is inquiring for 30,000 tons of iron for shipment by boat at opening of lake navigation. About 1,000 tons of basic iron also is on inquiry.

Pig iron production at Birmingham is steady. One company reports shipments a little better than its output.

The price continues \$16.50 to \$17, base, Birmingham. Encouraging reports are received from melters who are increasing their output in anticipation of heavy shipments the latter part of this month and through the summer.

Copper

Two quick rises in the price of copper, accompanied by large buying, were features of the nonferrous metal market in the past week. Tin also became firmer and there was somewhat of an improvement in sentiment on the strength of the January statistics. Other metals were firm but unchanged.

Shipments of all metals and metal products continue extremely large. Not only are current orders of large size, but the outlook is bright for a number of months ahead. The backlog of orders for virgin copper and

copper mill products is the largest the industry has had in several years. Brass and copper products have been marked up a total of $\frac{1}{2}$ cent to $\frac{5}{8}$ cent in two advances because of higher prices for copper.

The copper users in this country feared that the export sales together with the large business already on the books would send the price up.

The second price advance to 17.50c, Connecticut, took place today. The usual differentials for Middle Western delivery and other positions prevailed in both instances. Large business also was done at the new prices and it looked as if the uptrend would continue.

There was also a little buying for earlier positions. Shipments appear to be going forward as rapidly as the refineries are able to produce.

Zinc

Prime western continues moderately active, with the price unchanged at 6.35c, East St. Louis. The ore market also is unchanged at \$40 a ton. There is some talk that the mining industry will be in a stronger position as a result of the new sales arrangement and that therefore a rise is likely soon.

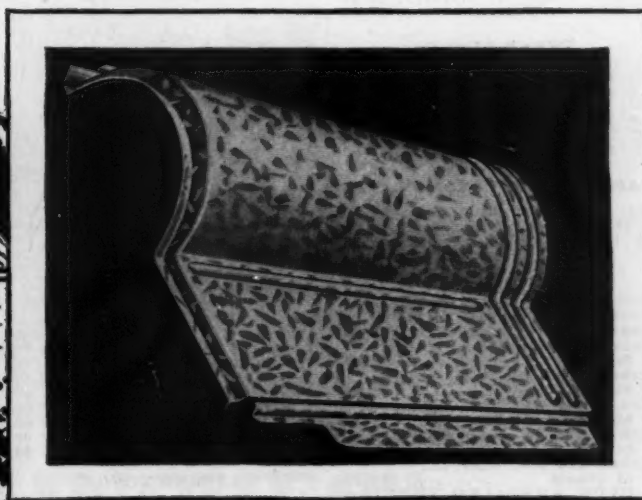
Tin

Users have bought moderately in the past week, a good amount for nearby positions, and some metal for delivery several months ahead. The price dropped almost to 48 cents and then recovered to above 50 cents. Domestic deliveries in January were 8,795 long tons, 2,400 tons larger than the average last year.

Lead

The market here is in a very strong position, but the threat of imports on account of the relatively low London price keeps the market here from going up. In the past few days London has shown more strength, so there is possibility of action in this market.

GARAGES... *Make them attractive with beautiful* SPANISH METAL TILE



WHEELING SPANISH METAL TILE AND FITTINGS make a roof that is rust-proof, leak-proof, fire-proof, lightning-proof—and a thing of beauty, too! Low cost makes it the practical roof for garages as well as larger buildings.

If you have overlooked this source of profit, make no mistake *now*. Wheeling Spanish Metal Tile Roofs are suitable for practically every type of residence and building. Old roofs badly in need of

repairs and at the mercy of storms or fires, can be replaced with Wheeling Spanish Metal Tile Roofs at low cost and each job nets you both profit and prestige.

For your business growth and profit opportunity use Wheeling Spanish Metal Tile and Fittings. The tiles are easy to lay—the fittings are easy to apply. And each unit is fabricated from Cop-R-Loy, the Copper Alloyed Steel, and guaranteed Hand Dipped in pure molten zinc.

WHEELING CORRUGATING COMPANY, Wheeling, W. Va.

New York Philadelphia Chicago Kansas City St. Louis Richmond
Chattanooga Minneapolis Des Moines Columbus, Ohio



Wheeling

When writing mention AMERICAN ARTISAN—Thank you!

Chicago Warehouse Metal and Furnace Supply Prices

AMERICAN ARTISAN is the only publication containing Western Metal, Furnace Supply and Hardware prices corrected weekly

METALS

PIG IRON

| | |
|------------------------|-------|
| Chicago Fdy., | |
| No. 2 | 20 00 |
| Southern Fdy. No. 2 | 22 51 |
| Lake Superior Charcoal | 27 04 |
| Malleable | 20 00 |

FIRST QUALITY BRIGHT CHARCOAL TIN PLATES

| | | |
|-------|------------------|-------|
| IC | 20x28 112 sheets | 22 50 |
| IX | 20x28 | 26 50 |
| IXX | 20x28 56 sheets | 14 50 |
| IXXX | 20x28 | 15 50 |
| IXXXX | 20x28 | 17 50 |

TERNE PLATES

| | | |
|----|--------------------------|-------|
| IC | 20x28, 40-lb. 112 sheets | 26 70 |
| IX | 20x28, 40-lb. 112 sheets | 29 70 |
| IC | 20x28, 25-lb. 112 sheets | 22 20 |
| IX | 20x28, 25-lb. 112 sheets | 25 20 |
| IC | 20x28, 20-lb. 112 sheets | 20 25 |
| IV | 20x28, 20-lb. 112 sheets | 23 00 |

"ARMCO" INGOT IRON PLATES

| | |
|--------------------|------|
| No. 8 ga.—100 lbs. | 4 15 |
| 3/16 in.—100 lbs. | 4 05 |
| 1/4 in.—100 lbs. | 3 85 |

COKE PLATES

| | |
|------------------------------|-------|
| Cokes, 80 lbs., base, 20x28 | 12 00 |
| Cokes, 90 lbs., base, 20x28 | 12 20 |
| Cokes, 100 lbs., base, 20x28 | 12 40 |
| Cokes, 107 lbs., base, 1C | |
| 20x28 | 12 75 |
| Cokes, 135 lbs., base, IX | |
| 20x28 | 14 75 |
| Cokes, 155 lbs., base, 2X, | |
| 56 sheets | 8 50 |
| Cokes, 175 lbs., base 3X, | |
| 56 sheets | 9 35 |
| Cokes, 195 lbs., base 4X, | |
| 56 sheets | 10 25 |

BLUE ANNEALED SHEETS

| | |
|-----------------------------|-------|
| Base 10 ga.—per 100 lbs. | 13 35 |
| "Armco" 10 ga.—per 100 lbs. | 4 15 |

ONE PASS COLD ROLLED BLACK

| | | |
|-----------|--------------|-------|
| No. 18-20 | per 100 lbs. | 33 60 |
| No. 22 | per 100 lbs. | 3 75 |
| No. 24 | per 100 lbs. | 3 80 |
| No. 26 | per 100 lbs. | 3 90 |
| No. 27 | per 100 lbs. | 3 95 |
| No. 28 | per 100 lbs. | 4 05 |
| No. 29 | per 100 lbs. | 4 20 |
| No. 30 | per 100 lbs. | 4 30 |

"ARMCO" GALVANIZED

| | | |
|------------|--------------|-------|
| "Armco" 24 | per 100 lbs. | 36 15 |
|------------|--------------|-------|

GALVANIZED

| | | |
|--------|--------------|-------|
| No. 16 | per 100 lbs. | 34 15 |
| No. 18 | per 100 lbs. | 4 30 |
| No. 20 | per 100 lbs. | 4 45 |
| No. 22 | per 100 lbs. | 4 50 |
| No. 24 | per 100 lbs. | 4 55 |
| No. 26 | per 100 lbs. | 4 90 |
| No. 27 | per 100 lbs. | 5 00 |
| No. 28 | per 100 lbs. | 5 15 |
| No. 30 | per 100 lbs. | 5 55 |

BAR SOLDER

| | | | |
|-------------------|----------|----------|---------|
| Warranted | | | |
| 50x50 |per | 100 lbs. | \$31 00 |
| Commercial | | | |
| 45-55 |per | 100 lbs. | 28 50 |
| Plumbers | ...per | 100 lbs. | 26 00 |

ZINC

| | |
|----------------------|-------|
| In Slabs | 7 25 |
| SHEET ZINC | |
| Cask Lots (500 lbs.) | 11 25 |
| Sheet Lots | 12 25 |

BRASS

| | |
|----------------------|----------|
| Sheets, Chicago Base | 22 1/2 c |
| Mill base | 21 1/2 c |
| Tubing, brazed base | 29 1/2 c |
| Wire, base | 22 c |
| Rods, base | 19 1/2 c |

COPPER

| | |
|--------------------------------|----------|
| Sheets, Chicago base | 26 1/2 c |
| Mill base | 25 1/2 c |
| Tubing, seamless base | 27 1/2 c |
| Wire, plain rd., 8 B. & S. Ga. | |
| and heavier | 24 1/2 c |

LEAD

| | |
|--------------|------|
| American Pig | 7 50 |
| Bar | 8 50 |

TIN

| | | |
|---------|--------------|-------|
| Pig Tin | per 100 lbs. | 53 00 |
| Bar Tin | per 100 lbs. | 50 00 |

HARDWARE, SHEET METAL SUPPLIES, WARM AIR FURNACE FITTINGS AND ACCESSORIES.

ASBESTOS

| | |
|--|-----------------|
| Paper up to 1/16 | 6c per lb. |
| Roll board | 6 1/2 c per lb. |
| Mill board 3/32 to 1/2 | 6c per lb. |
| Corrugated Paper (350 sq. ft. to roll) | 36 00 per roll |

BRUSHES

| | |
|--------------------------|-------|
| Furnace Pipe Cleaning | |
| Bristle with handle each | 10 75 |
| Flue Cleaning | |
| Steel only, each | 1 25 |

CEMENT, FURNACE

| | |
|---------------------------------|-------------------|
| American Seal, 5-lb. cans, net | \$ 45 |
| American Seal, 10-lb. cans, net | 85 |
| American Seal, 25-lb. cans, net | 2 25 |
| Pecora | per 100 lbs. 7 50 |

CHIMNEY TOPS

| Adams' Revolving | | |
|------------------|--------------|------------|
| | Wt. Doz. | Price Doz. |
| 4 in..... | 21 lbs..... | \$11 00 |
| 6 in..... | 24 lbs..... | 11 50 |
| 7 in..... | 30 lbs..... | 13 50 |
| 8 in..... | 33 lbs..... | 15 00 |
| 9 in..... | 51 lbs..... | 16 50 |
| 10 in..... | 56 lbs..... | 18 00 |
| 12 in..... | 66 lbs..... | 22 00 |
| 14 in..... | 110 lbs..... | 36 00 |

CLINKER TONGS

| | |
|------|------|
| Each | 1 50 |
|------|------|

CLIPS

| | |
|---------------------------|------|
| Damper | |
| No-Rivet Steel, with tail | |
| pieces, per gross | 9 50 |
| Rivet Steel, with tail | |
| pieces, per gross | 7 50 |
| Tail pieces, per gross | 2 40 |

COPPERS—Soldering

| | | | | |
|----|-----|-----------------|---------|-----|
| 3 | lb. | and heavier.... | per lb. | 40c |
| 2½ | lb. | | per lb. | 45c |
| 2 | lb. | | per lb. | 48c |
| 1½ | lb. | | per lb. | 55c |
| 1 | lb. | | per lb. | 60c |

CORNICE BRAKES

| | |
|-----------------------|-----|
| Chicago Steel Bending | |
| No. 1 to 6B | Net |

CUT-OFFS

| | |
|--------------------------------|-----|
| Gal., plain, round or cor. rd. | |
| 24 gauge | 30% |
| 28 gauge | 35% |

DAMPERS

| | |
|-------------------------|-------|
| "Yankee" Hot Air | |
| 7 inch, each 20c, doz. | 11 60 |
| 8 inch, each 25c, doz. | 2 20 |
| 9 inch, each 30c, doz. | 2 60 |
| 10 inch, each 32c, doz. | 2 80 |
| Smoke Pipe | |
| 7 inch, doz. | 11 60 |
| 8 inch, doz. | 2 20 |
| 9 inch, doz. | 3 00 |
| 10 inch, doz. | 3 75 |
| 12 inch, doz. | 4 50 |

ADAMS No. 1 CHECK

| | |
|---------------------------|------|
| Check and Collar Complete | |
| 8 inch, each | 2 00 |
| 9 inch, each | 2 25 |
| End Check Only | |
| 8 inch, each | 1 60 |
| 9 inch, each | 1 85 |
| Collar Only | |
| 8 inch, each | 50 |
| 9 inch, each | 65 |

No. 2 CHECK

| | |
|--------------------------|-------|
| 8 inch, each | 1 00 |
| 9 inch, each | 1 00 |
| 10% Disc. on Adams No. 1 | |
| Diamond Smoke Pipe | |
| 7 inch, doz. | 12 00 |
| 8 inch, doz. | 3 20 |
| 9 inch, doz. | 4 80 |
| 10 inch, doz. | 6 00 |

Adams' Sheet Metal

| | |
|---------------|-------|
| 7 inch, doz. | 11 60 |
| 8 inch, doz. | 2 20 |
| 9 inch, doz. | 2 60 |
| 10 inch, doz. | 2 80 |
| 12 inch, doz. | 3 50 |
| 14 inch, doz. | 5 00 |

EAVES TROUGH

| | |
|----------------------------------|-----|
| Galv. Crimpedge, crated 75 & 10% | |
| Zinc, "Barnes" | 60% |

ELBOWS

| | |
|--|-----|
| Conductor Pipe | |
| Galv. plain or corrugated, round flat Crimp, | |
| 28 Gauge | 50% |
| 26 Gauge | 45% |
| 24 Gauge | 15% |
| Galv. Terne Steel | |
| Plain Rd. and Rd. Corr.: | |
| 28 Ga. | 60% |
| 26 Ga. | 45% |
| 24 Ga. | 15% |

Square Corrugated

| | |
|---|---------|
| No. 28 Gauge | 50% |
| 26 Gauge | 35% |
| Portico Elbows | |
| Standard Gauge Conductor Pipe, plain or corrugated, | |
| Not nested | 70 & 5% |
| Nested Solid | 70 & 5% |

Sq. Corr., A. & B. & Octagon

| | |
|--------|-----|
| 28 Ga. | 50% |
| 26 Ga. | 35% |

Portico

| | |
|--------------------|-----|
| 1", 1 1/4", 1 1/2" | 45% |
|--------------------|-----|

Copper

| | |
|---------------------|-----|
| 16 oz., all designs | 50% |
|---------------------|-----|

Zinc

| | |
|------------|-----|
| All styles | 60% |
|------------|-----|

ELBOWS—Steve Pipe

| | |
|--|-------|
| 1-piece Corrugated, Uniform Blue "Milcor" No. 28 Gauge, Doz. | |
| 5-inch | 11 15 |
| 6-inch | 1 25 |
| 7-inch | 1 75 |

Special Corrugated

| | |
|--------|-------|
| 6-inch | 11 00 |
| 7-inch | 1 60 |

Adjustable—Uniform Blue

| | |
|--------------------------------------|-------|
| "Milcor" No. 28 Gauge, Uniform Blue, | |
| 5-inch | 11 60 |
| 6-inch | 1 75 |
| 7-inch | 2 10 |

WOOD FACES—60% off list.

FENCE

| | |
|---------------------------|-------|
| 736-6-12 1/2% (100 rods) | 28 62 |
| 1948-6-14 1/2% (100 rods) | 48 62 |

FILES AND RASPS

| | |
|---------------------|--------|
| Heller's (American) | 50-10% |
| American | 60-10% |
| Arcade | 50% |
| Black Diamond | 50% |
| Eagle | 50% |
| Great Western | 50% |
| Kearney & Foot | 50% |
| McClellan | 50% |
| Nicholson | 50% |
| Simonds | 60% |

FIRE POTS

| | |
|--|-------|
| Geo. W. Diener Mfg. Co. | Pa. |
| No. 02 Gasoline Torch, 1 qt. | 5 15 |
| No. 9250, Kerosene, or Gasoline Torch, 1 qt. | 6 50 |
| No. 10 Tinner's Furn. Square tank, 1 gal. | 11 20 |
| No. 15 Tinner's Furn. Round tank, 1 gal. | 10 70 |
| No. 21 Gas Soldering Furnace | 8 60 |
| No. 110 Automatic Gas Soldering Furnace | 10 50 |

Quick Meal Stove Co.
Vesuvius, F. O. B. St. Louis 30%
(Extra Disc. for large quantities.)

GALVANIZED WARE

| | |
|----------------------------------|-------|
| Pails (Galv. after made), 10-qt. | 32 00 |
| Tubs (Galv. after made), No. 1 | 5 75 |
| No. 2 | 6 50 |

GLASS

| | |
|----------------------------------|-------|
| Single Strength, A, all brackets | 37% |
| Single Strength, B, all brackets | 38-5% |
| Double Strength, A, all brackets | 37% |
| Double Strength, B, all brackets | 38-5% |

HANGERS

| | |
|---|--------------|
| Conductor Pipe | |
| Milcor Perfection Wire | 25% |
| Milcor Triplex Wire | 10% |
| Eaves Trough | |
| Milcor Steel (galv. after forming) List | plus 13 1/4% |
| Milcor Selflock B. T. Wire, List | plus 50% |

HOOKS

| | |
|---|-----|
| Conductor | |
| "Direct Drive" Wrought Iron for wood or brick | 15% |

HUMIDIFIER

| | |
|-------------------------|--------|
| "Front-Rank," Automatic | |
| In single lots | 50% |
| In lots of 10 or more | 50-5% |
| In lots of 25 or more | 50-10% |
| Vapor pans, etc., each | 50% |

LIFTERS

| | |
|-------------|----------------|
| Stove Cover | |
| Coppered | per gro. 34 00 |
| Alaska | per gro. 4 75 |

MALLETS

| | |
|---------|----------------|
| Tinners | |
| Hickory | per doz. 33 25 |

MITRES

| | |
|-------------------------|-------|
| Galvanized steel mitres | |
| 28 Ga. | 70 |
| 26 Ga. | 60-30 |

NAILS

| | |
|-----------------|-------|
| Cut Steel, base | 34 00 |
| Wire | |
| Common | 33 10 |
| Cement Coated | 3 10 |

(Continued on page 80)



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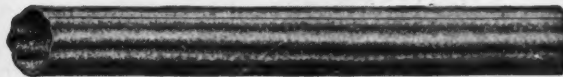
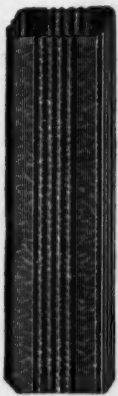
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|--|---|
| Asbestos Dry Paste: | Galv., Plain Ridge Roll, b'dld 75-15-5% |
| 300-lb. barrel \$14 00 | Galv., Plain Ridge Roll crated 75-15% |
| 100-lb. barrel 7 50 | |
| 50-lb. pall 4 25 | |
| 10-lb. bag 1 00 | |
| 5-lb. bag 55 | |
| 2½-lb. cartons 25 | |
| | SCREWS |
| POKERS, FURNACE | Sheet Metal |
| Each \$0 75 | 7, ½x½, per gross \$0 52 |
| | No. 10, ¾x1/16, per gross 63 |
| POKERS, STOVE | No. 14, ¾x½, per gross.. 83 |
| Nickel Plated, coil handles, per doz. 1 10 | |
| W'r't Steel, str't or bent, per doz. \$0 75 | SHEARS, TINNERS' & MACHINISTS' |
| | Viking \$22 00 |
| PIPE | Lennox Throatless |
| Conductor | No. 18 35% |
| Cor. Rd., Plain Rd., or Sq. | Shear blades 10% |
| | (f. a. b. Marshalltown, Iowa) |
| Galvanized | |
| Crated and nested (all gauges) 75-7½% | SHIELDS, ADJUSTABLE RADIATOR |
| Crated and not nested (all gauges) 75-3½% | No. 1 "Gem" 11" to 17".... 30% |
| | No. 2 "Gem" 14" to 24".... 30% |
| Furnace Pipe | No. 3 "Gem" 35" to 65".... 30% |
| Double Wall Pipe and Fittings 60% | |
| Single Wall Pipe, Round Galvanized Pipe 60% | SHOES |
| Galvanized and Tin Fittings 60% | Galv. 28 Gauge, Plain or corrugated round flat crimp.. 60% |
| Lead | 26 gauge round flat crimp.. 45% |
| Per 100 lbs. \$12 50 | 24 gauge round flat crimp.. 15% |
| Stove Pipe | |
| "Milcor" "Titelock" Uniform Blue Stove | SNIPS, TINNERS |
| 28 gauge, 5 inch U. C. nested 11 00 | Clover Leaf 40 & 10% |
| 28 gauge, 6 inch U. C. nested 12 00 | National 40 & 10% |
| 28 gauge, 7 inch U. C. nested 14 00 | Star 50% |
| 30 gauge, 5 inch U. C. nested 10 25 | Milcor Net |
| 30 gauge, 6 inch U. C. nested 11 00 | |
| 30 gauge, 7 inch U. C. nested 13 00 | SQUARES |
| T-Joint Made up | Steel and Iron Net |
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| PULLEYS | Try and Mitre Net |
| Furnace Tackle....per doz. \$0 85 | Fox'sper doz. \$6 00 |
|per gro. \$ 50 | Winterbottom's 10% |
| Furnace Screw (enameled)per doz. 75 | |
| | STOPPERS, FLUE |
| PUTTY | Commonper doz. \$1 10 |
| Commercial Putty, 100-lb. Kits \$3 50 | Gem, No. 1per doz. 1 10 |
| QUADRAENTS | Gem, flat, No. 3....per doz. 1 00 |
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| Steel and Semi-Steel 33½% | Cattle Wire—galvanized catch weight spool, per 100 lbs.. 3 80 |
| Baseboard, 1 piece 33½-20% | Galvanized Plain Wire, No. 9, per 100 lbs. 3 25 |
| Baseboard, 2 piece 33½% | |
| Wall 33½% | |
| Adjustable Ceiling Ventilators 33½% | |
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| Japanned, Bronzed and Plated, 4x6 to 14x14..... 33½% | |
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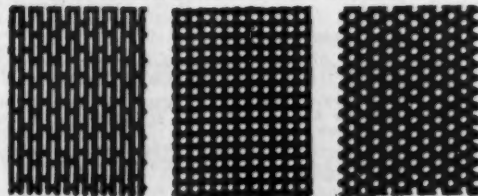
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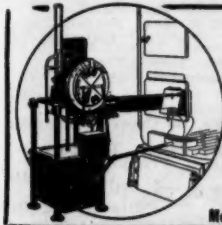
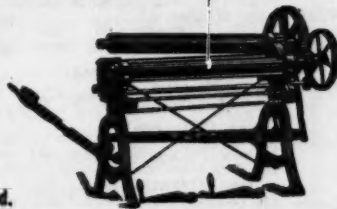
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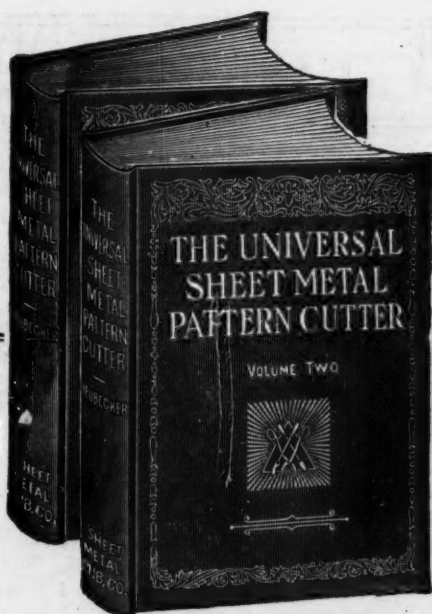
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(Continued on page 84)



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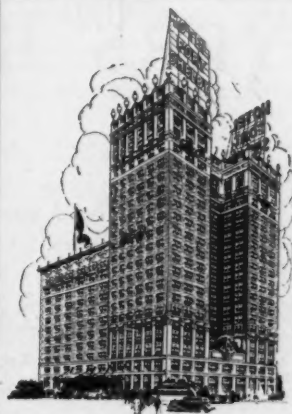
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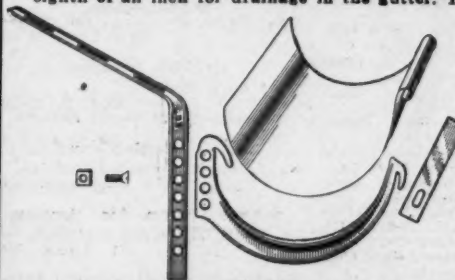
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Wanted to Buy—Plumbing, heating and sheet metal shop in good Illinois town. Address G-491, AMERICAN ARTISAN, 620 S. Michigan Ave., Chicago, Ill.

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Sheet Metal Worker—Thoroughly experienced in general sheet metal work, pattern cutting and shop management, wants position. At present employed as shop manager and foreman but conditions compel me to make change. Prefer western Pennsylvania. Exchange references. State position to R-490, AMERICAN ARTISAN, 620 So. Michigan Ave., Chicago, Ill.

Tinner and furnace installer wants position with live hardware store in small town in Middle West. Can figure, lay out, cut own patterns and make up all fittings. Neat, fast and competent. Can also do ordinary house plumbing. Want steady work more than big wages. Address Z-491, AMERICAN ARTISAN, 620 S. Michigan Ave., Chicago, Ill.

First-class tinner and furnace man, experienced at laying out, engineering, furnace work, shop and outside work, wants position. City and country town experience. 20 years' experience. Age 35. Good habits. Would consider small shop on salary and commission basis. State full particulars. Address J. D. Grace, Elmer, Mo. B-492

First class all around sheet metal worker and layout man wants position at once. Married, sober, steady and reliable. Experienced in all branches of the trade. Have a long and wide range of experience. Been foreman for years. State wages and hours. Will go anywhere. Address S. M. Worker, 2310 Laurel St., Shreveport, La. P-490

Situation wanted by an all around capable sheet metal worker. Lay out, assemble and erect any branch of same. Work from blue prints. Married, best of health, capable of taking charge of shop and not afraid of work. Address F-492, AMERICAN ARTISAN, 620 S. Michigan Ave., Chicago, Ill.

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SITUATION WANTED

Position wanted by licensed plumber who is considered especially good on hot water, steam and vapor heating. Can handle any jobs, large or small. Would also consider running shop on commission basis. Address B-491, AMERICAN ARTISAN, 620 S. Michigan Ave., Chicago, Ill.

Situation wanted by young married man. Good tinner, furnace and roofing man. Fair experience in plumbing and heating. Sober and reliable. Very reasonable wages. Address A-492, AMERICAN ARTISAN, 620 S. Michigan Ave., Chicago, Ill.

A practical, competent roofing, sheet metal and furnace man who can produce results, wants connection with reliable concern as superintendent, estimator or representative. Age 36 years. Address S-490, AMERICAN ARTISAN, 620 So. Michigan Ave., Chicago, Ill.

Situation Wanted—By first-class tinner and furnace man. Can solicit, estimate and lay out work. Married, strictly sober and reliable. Can come at once. Address D-492, AMERICAN ARTISAN, 620 S. Michigan Ave., Chicago, Ill.

Year around situation wanted by first-class sheet metal worker and furnace man. Can lay out, estimate and install same. Missouri, Kansas, Oklahoma or Arkansas preferred. Address H. G. Babb, 523 Margrave St., Ft. Scott, Kans. A-491

Sheet Metal Worker—Thoroughly experienced pattern cutter and foreman on all classes of general sheet metal work wants steady position with reliable company. Address Y-491, AMERICAN ARTISAN, 620 S. Michigan Ave., Chicago, Ill.

Sheet metal estimator, practical sheet metal worker and layout man with good technical education wants position. No job is too big to estimate. Address E-492, AMERICAN ARTISAN, 620 S. Michigan Ave., Chicago, Ill.

Situation wanted by first-class sheet metal worker and furnace installer. Michigan or adjoining states preferred. Married, sober and can furnish best of references. Address B. J. Hawkins, 117 Galusha St., Owosso, Mich. C-492

HELP WANTED

Wanted—A1 man as foreman for progressive shop in central Illinois town of over 12,000. This concern has been in business over 35 years. The man we want must be first-class in laying out and installing everything in the sheet metal and furnace work. Must be able to handle men. Will pay \$50 a week and commission to right man the year around. No lost time. We need this man at once. Give full particulars in strict confidence. Address X-491, AMERICAN ARTISAN, 620 S. Michigan Ave., Chicago, Ill.

Wanted—First class sheet metal and furnace man as working foreman. Must be able to handle men and get results from same. Also able to figure jobs and layout and make up anything in the line of sheet metal and furnace work. No booze fighters wanted. Must be able to invest some money in the business. Salary \$40.00 to start. Steady work guaranteed for the right man. Address O-490, AMERICAN ARTISAN, 620 So. Michigan Ave., Chicago, Ill.

Wanted—Thoroughly experienced worker for gutter, furnace and sheet metal work. Must be able to answer all calls of service. If not experienced do not answer, as none but experienced man will do. Address Carl Weber, Foreman, Schwickert's Sheet Metal Shop, Mankato, Minn. T-491

Wanted—Several experienced men to sell warm air heating installations. We need good men at once. Splendid opportunity to make real money for those who know the business. Apply Mr. Calhoun, Round Oak Heating Company, 711 So. Wells St., Chicago, Ill. M-490

HELP WANTED

There is an opportunity in this city in connection with our firm for a young man to build up for himself position as retail salesman. Future and money depends on him. If he can stand plenty of grief, hard work and disappointment he may apply by letter to Jack Stowell, 14 S. LaSalle St., Aurora, Ill. Give full particulars as to age, past business experience, church attended, nationality, education, etc. E-491

Tinner Wanted—A good, clean, young tinner that can erect and repair windmills and pumps, install furnaces and do all kinds of work that comes into a hardware store in a town of 4,000 people situated in a very rich farming country in the southeast corner of South Dakota. Steady job the year round for the right man. State wages in first letter and give references. No boozers need apply. Address, Fitzgerald Hardware Co., Madison, S. D. T-490

Wanted—Mechanic for tin and plumbing shop; also warm air heating and pumps. In business 28 years; last two mechanics here 16 and 8 years, respectively. Good wages to right man. No layoffs. Boozers not considered. Address E. L. Garden, Souris, N. D. D-491

Wanted—Reliable roofer and sheet metal worker for inside and outside work. Must be able to lay out own work with skill and neatness, also read blue prints. Fast growing shop in Cincinnati, Ohio. Address W-491, AMERICAN ARTISAN, 620 S. Michigan Ave., Chicago, Ill.

Help Wanted—First-class sheet metal worker with experience in heating and ventilating. Must lay out own patterns. State wages expected and when you can report for work. Cheap living conditions. Address Gust Krack & Son, Inc., 1015 West 18th St., Erie, Pa. X-490

TINNERS' TOOLS

We are in the market for several items of used sheet metal machinery for the working of the medium and heavy sheets. What have you to sell in this line? Address Dean Specialty Works, San Antonio, Texas. J-490

Wanted—Steel brake 10 ft. for 20 gauge. Foot power square shears 8 ft. long for 24 gauge. Punch and shear for 3/4x2 Bar iron. Address L-490, AMERICAN ARTISAN, 620 So. Michigan Ave., Chicago, Ill.

For Sale—Complete set of tinner's tools, including 10-ft. double truss brake and 30-in. P. S. & W. foot power square shears, also safe, desk, typewriter and 1/2-ton truck; also some stock. Cheap. Call or write at once to John Zingsheim, Shawano Wis. R-491

For Sale—Tinner's tools, complete set standard P. S. W. Will sell at half price, or will sell any part of set. Address Wm. A. Meyer, 513 Valley St., Minot, N. D. O-491

For Sale—One 6-foot steel brake in Minnesota. Cheap if taken soon. Address Y-490, AMERICAN ARTISAN, 620 S. Michigan Ave., Chicago, Ill.

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Wanted to Buy—One second-hand steel cornice brake with cornice attachments. One second-hand throatless shear. Give description and state price. Address L-491, AMERICAN ARTISAN, 620 S. Michigan Ave., Chicago, Ill.

Wanted—I am interested in a used 8-foot cornice brake (light Chicago steel brake). State price. Prefer to buy from party between Pittsburgh and Cleveland. Address P-491, AMERICAN ARTISAN, 620 S. Michigan Ave., Chicago, Ill.

For Sale—One 30-inch Niagara square shear in A1 condition. First check for \$50 takes it, f. o. b. Pekin, Ill. Address Walter A. Sargent, Pekin, Ill. S-491

For Sale Cheap—1 pair 30-inch squaring shears. Address W. S. Dodge, Nevada, Iowa. M-491

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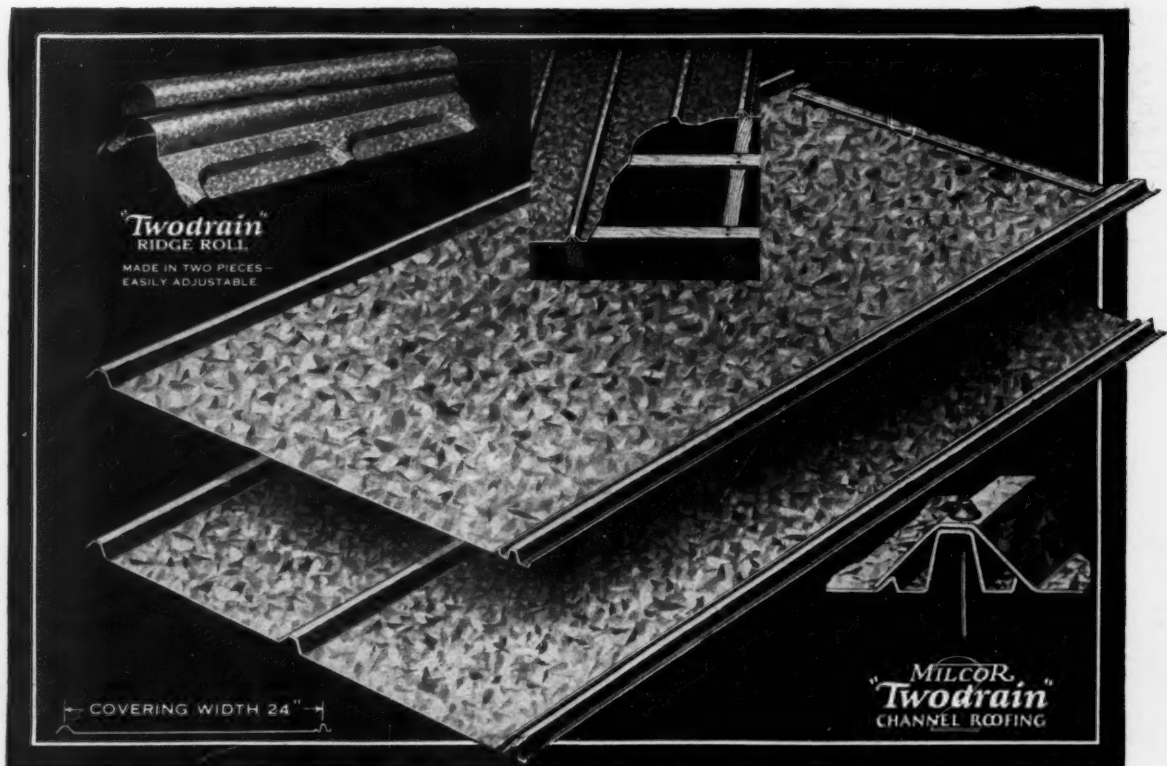
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